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ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
OF THE
PROVINCE OF ALBERTA
FOR THE YEAR
1949



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PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

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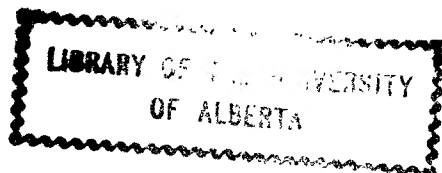
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DEPARTMENT OF AGRICULTURE
1949

HON. D. A. URE, *Minister of Agriculture*

MR. O. S. LONGMAN, *Deputy Minister of Agriculture*

Heads of Branches

- A. M. Wilson, Field Crops Commissioner.
- W. H. T. Mead, Live Stock Commissioner.
- D. H. McCallum, Dairy Commissioner.
- F. J. Higginson, Acting Poultry Commissioner.
- W. G. le Maistre, Provincial Apiarist.
- D. R. Fraser, Fur Farms Supervisor.
- F. H. Newcombe, Director Extension Service.
- E. E. Ballantyne, V.S., Director Veterinary Services.
- R. M. Putnam, Superintendent, Schools of Agriculture and Assistant
Deputy Minister.
- N. N. Bentley, Principal, Vermilion School of Agriculture.
- C. E. Yauch, Principal, Olds School of Agriculture.
- G. S. Black, Supervisor, Junior Activities,
- P. D. Hargrave, Superintendent, Horticultural Station.
- E. B. Swindlehurst, Acting Supervisor, Relief Settlement.

To His Honour,

J. J. BOWLEN,

Lieutenant Governor of the Province of Alberta.

Sir:

I have the honour to submit herewith the Report of the
Department of Agriculture for the year 1949.

I have the honour to be, Sir,

Your obedient Servant,

D. A. URE,

Minister of Agriculture.

REPORT OF THE DEPUTY MINISTER

(O. S. Longman)

THE HONOURABLE D. A. URE,
Minister of Agriculture.

SIR:

I have the honour to submit herewith the forty-third Annual Report of the Department of Agriculture. The report contains an account of the activities conducted by the various Branches of the Department during the year ending December 31st, 1949. Special mention has been made of the Master Farm Family Award Program, the opening of the new Alberta Veterinary Laboratory, the erection of seed cleaning plants in co-operation with certain Municipal Districts, and the encouragement of tree planting throughout the province through the assistance of the District Agriculturists, all of which are fully dealt with within the report.

In order to consolidate further the Department's programs for rural young people, the supervision of Girls' Club Work was transferred from the Home Economics Division of the Extension Service to the Junior Activities Division. By this transfer the Department's services and programs for young people, e.g., Schools of Agriculture, Junior Club work and other activities, can be closely co-ordinated and consolidated.

I have to report a considerable number of changes in personnel. On April 6th, Mr. F. N. Miller resigned as Principal of the Olds School of Agriculture and Mr. C. E. Yauch was appointed to succeed him. Mr. Yauch has been a member of the staff of the School of Agriculture for many years, and is thus well qualified to assume the responsibilities of principalship.

On June 1st Mr. R. M. Putnam was appointed as Superintendent of Schools of Agriculture, and Mr. F. H. Newcombe was named as Director of Extension to succeed Mr. Putnam. On July 1st Mr. S. S. Graham was transferred to Edmonton from the post of District Agriculturist at Lethbridge to assume the duties of Supervisor of District Agriculturists.

Mr. W. H. T. Mead, Supervisor, Live Stock Breeding Associations at Olds, was appointed Live Stock Commissioner on June 1st.

I regret to report the untimely death of Mr. C. W. Traves, Poultry Commissioner, on October 18th. Mr. Traves had been in ill health since early in May, and after an illness of several months passed away. Mr. F. J. Higginson, Inspector in the Poultry Branch, was named Acting Poultry Commissioner following the death of Mr. Traves.

Mr. P. D. Hargrave returned from post-graduate studies in England to resume the Superintendency of the Horticultural

Station at Brooks. Mr. P. D. McCalla was appointed Supervisor of Horticulture in the Field Crops Branch.

Mr. C. A. Cheshire assumed the position of Extension Agricultural Engineer in April, succeeding Mr. E. B. Martin. Mr. F. F. Parkinson was transferred from the staff of the School of Agriculture at Olds to become Supervisor of Special Projects with the Field Crops Branch.

A new development occurred during the summer, with the appointment of Thomas Kilduff as Extension Research Officer attached to the new Science Laboratory of the Science Service, Dominion Department of Agriculture, Lethbridge. This appointment was a new departure in the relationship of a Provincial and Dominion Department of Agriculture. Mr. Kilduff's duties as Extension Officer are to publicize the experimental work and results of the Science Service Laboratory.

I wish to take this opportunity to express my appreciation to the officers and staff of the Department for their loyal support and their devotion to duty. Without the generous support rendered the accomplishments of the past year could not have been attained.

Respectfully submitted,

O. S. LONGMAN,

Deputy Minister.

REPORT OF FIELD CROPS BRANCH

A. M. WILSON, *Field Crops Commissioner*

J. E. BIRDSALL, <i>Supervisor Crop Improvement</i>	G. R. STERLING, <i>Supervisor Soil Conservation and Weed Control</i>
P. D. MCCALLA, <i>Supervisor of Horticulture</i>	W. LOBAY, <i>Supervisor Crop Protection</i>

GENERAL

Yields of grain were considerably below the long-time average. The soil was dry at seeding time over most of the province and particularly in central Alberta. On May 24th in all areas severe frosts occurred and crops were frozen to the ground. Dry weather prevailed in central areas until mid-July. Following late rains, second growth came on quickly which resulted in very irregular crops. By early September prospects for late crops were excellent, however severe frosts occurred on September 10th and any grain not thoroughly mature was severely damaged. In southern Alberta except in the south-eastern area average crops were produced. The Peace River block, although having local poor crop areas on the average produced crops above normal yield.

The acreage of wheat was increased by 21% over 1948. This increase can be attributed to an early open Spring, the continued guarantee of \$2.00 per bushel for wheat under the British Wheat Agreement and an increase of land summer-fallowed in 1948. Oat and barley crops were each decreased by approximately 6%. Farmers showed greater interest for wheat than oats or barley because the latter crops offered no price assurance other than the established floor of 61½ and 90c respectively. Flax acreage declined from 250,000 acres planted in 1948 to 37,500 in 1949. This decrease reflected also the withdrawal of the guaranteed price.

In many parts of south-eastern and central Alberta average wheat yields per township were below 8 bushels per acre. It is estimated that Prairie Farm Assistance will be paid to 25,000 farmers in 1,520 townships. The areas declared eligible for assistance in Alberta are greater than any year since this legislation became effective.

Hail damage covered wider areas than for several previous years. Storms unusually severe crossed from west to east beginning in an area west from Lacombe and extending north-east to the Saskatchewan border north of Lloydminster. Storms more regional in nature occurred at Red Deer, Didsbury and Acme.

Forage seed production was sharply reduced from the all-time record of 1948. Dry weather during early Spring and Summer resulted in such limited growth that seed yields were particularly low. While this condition drastically decreased yields of alsike and altaswede clover the brome crop of east-central Alberta was practically a failure. Following the rains of mid-July growing conditions were very much improved, however

due to the delayed growth any prospects of average crops were lost because of the severe September frost.

The production of rape seed and mustard seed normally grown under contract was sharply reduced. Contracts for canning crops were also limited because of carry-over from previous years. Sugar beets continued to be a desirable and satisfactory crop for irrigation farmers and although the acreage was again expanded, reaching 32,000 acres, the yield was considerably below 1948 production.

The following table gives an estimate of field crops in Alberta with comparative figures for 1948.

Crop	1948	1949	1948	1949	1908-	1948	1949
	Acres	Acres	bus. per Acre	bus. per Acre	1948 Avge.	Bushels	Bushels
Spring Wheat	6,259,000	7,586,000	18.4	12.8	18.0	115,000,000	97,000,000
Oats	2,392,000	2,255,000	31.4	23.0	34.0	75,000,000	52,000,000
Barley	2,226,000	2,118,000	24.7	17.0	25.0	55,000,000	36,000,000
All Rye	612,000	325,000	16.2	7.4	12.0	9,900,000	2,400,000
Peas, Dry	14,500	5,500	14.3	15.5	17.0	207,000	85,000
Mixed Grain	41,600	43,700	25.5	15.8	28.0	1,061,000	690,000
Flax	250,000	37,500	12.2	8.0	8.0	3,050,000	300,000
Potatoes	22,800	25,400	89.0 tons	58.0 tons	82.0 tons	2,029,000 tons	1,473,000 tons
Hay and Clover	665,000	665,000	1.53	1.00	1.4	1,017,000	665,000
Alfalfa	217,000	243,000	1.80	1.30	2.2	391,000	316,000
Fodder Corn	400	700	4.50	4.40	4.1	2,000	3,000
Grain Hay	800,000	700,000	1.40	1.20		1,120,000	840,000
Sugar Beets	29,200	32,300	11.1	10.37	10.0	324,000	335,000

CROP IMPROVEMENT SERVICE

FORAGE CROP SEED DISTRIBUTION POLICY

This policy provided forage seed distribution facilities in sections of the province where forage crop seeds were not otherwise available. Readily available supplies of good seed are essential if these valuable crops are to be promoted for livestock feed, soil conservation and weed control purposes.

Various policies have been used in past years to encourage greater use of forage crops. In recent years a straight distribution policy under which seed was supplied at cost, freight prepaid to distributing points, has operated. Whenever the distribution in any area developed to the extent that retail outlets were established, or the trade was prepared to establish such outlets, the facilities of the distribution policy were withdrawn. After seed distribution was completed in 1949 it was decided to withdraw the policy entirely. The seed trade was advised and was encouraged to make seed available over the entire province in 1950.

The Forage Crop Seed Distribution Policy in operation during 1949 established a reserve of grass and legume seed and provided readily available seed ordering and delivery facilities at 141 strategically located points.

A Summary of Seed Distribution for the years 1943 to 1949 (Inclusive) is as follows:
Pounds of Seed Distributed

	1943	1944	1945	1946	1947	1948	1949
Alfalfa	143,323	161,000	170,435	219,130	130,030	97,601	79,650
Red Clover	12,095	8,925	28,645	72,782	47,650	28,667	16,807
Alsike Clover	13,089	26,200	35,464	50,687	31,650	23,497	13,221
Sweet Clover	75,759	85,000	116,890	134,962	169,898	150,889	189,882
Alsike-Timothy Mixture	3,486	6,000	10,982	9,289	15,300	18,857	13,135
Timothy	37,003	40,000	39,190	44,575	41,756	29,793	16,094
Crested Wheat Grass	53,640	44,436	44,035	47,621	24,800	8,647	13,668
Creeping Red Fescue	1,404	2,000	1,753	5,735	4,441	12,454	21,212
Brome	163,706	152,000	161,845	174,275	166,305	152,393	104,403
Alfalfa-Sweet Clover Mixture	..	..	6,785	4,970	4,587	25,059	42,997
Miscellaneous	550	220	5,807	891	263	1,311	350
TOTAL	504,055	525,781	621,831	764,917	636,680	549,168	512,213

While less seed was distributed under the policy in 1949 than for several years, the total distribution, including seed distributed by growers' organizations, was about the same as for 1948 when it exceeded one and a half million pounds.

Sweet clover, brome and alfalfa were in greatest demand and are grown in most sections of the province. Brome stocks were depleted early in the season and, since it is used extensively in mixtures, that no doubt reduced the demand for seed of the legumes, particularly alfalfa. Crested wheat is confined mainly to the drier open prairie sections where it is valuable for hay and pasture and is used in range reclamation. Shortage of seed and very high prices kept the demand for seed of crested wheat at a very low level. With many growers giving up the production of alsike and red clover as a seed crop, the demand for seed dropped considerably. The demand for timothy seed continued to decrease. Creeping red fescue continued to gain importance as a seed crop and for use in pasture mixtures. In conjunction with seed distribution the Field Crops Branch stressed the importance of inoculating legumes, proper seeding and management practices and the use of grass-legume mixtures for forage purposes. To ensure the inoculation of legume seeds, tins of nitro-culture were placed in all sacks of alfalfa and clovers distributed. Special emphasis was placed on the quality and purity of seed distributed especially in seed producing areas.

SELLING PRICES OF FORAGE CROP SEEDS UNDER DISTRIBUTION POLICY
1941 to 1949 INCLUSIVE (PER POUND)

	1941	1942	1943	1944	1945	1946	1947	1948	1949
Alfalfa	18c	29c	33c	33c	34c	34c	49c	41c	54c
Red Clover	18c	25c	30c	31c	31c	31c	53c	55c	39c
Alsike Clover	18c	21c	27c	28c	28c	33c	52c	42c	29c
Sweet Clover	.05c	.09c	08 ½c	12c	13c	13c	13c	15c	17c
Timothy	.07c	11c	07 ½c	10c	11c	11c	12c	11 ½c	17c
Crested Wheat Grass	13c	13c	10c	13c	14c	11c	18c	32c	37c
Creeping Red Fescue	..	..	48 ½c	50c	60c	68c	72c	38c	43c
Brome	13c	15c	10c	15c	15c	14c	21c	16c	27c

* Basis No. 1 seed except brome, crested wheat and creeping red fescue which are basis Certified No. 1.

The prices in the foregoing table are of interest since they show the tremendous increase during the war and post-war period.

With the distribution policy being discontinued it is also of interest to take stock of the seed handled through it and preceding policies since 1937 when a Dominion-Provincial policy

was inaugurated. Total distribution in pounds of the more important kinds from 1937 to 1949 is as follows:

Alfalfa	1,403,069	Brome	1,419,632
Red Clover	257,431	Crested Wheat	404,378
Alsike	227,896	Timothy	330,655
Sweet Clover	1,157,362	Creeping Red Fescue	49,049

In addition, mixtures and miscellaneous seeds to the amount of 181,784 pounds were distributed, bringing the grand total for thirteen years to 5,431,256 pounds.

It is impossible to assess the value of these policies to Alberta agriculture, but from the educational standpoint alone the distribution of such a quantity of seed has had a tremendous impact. During the war and post-war period when a strong export demand existed, the distribution policy was especially valuable since through it large quantities of seed were reserved each year for provincial needs.

CROP IMPROVEMENT DEMONSTRATION POLICY

A number of crop improvement projects, some new and some already in effect, were consolidated under this policy. It is designed for the use of District Agriculturists in demonstrations relative to better crops and cropping practices including soil conservation and weed control. Seed and fertilizer were supplied on approved applications at half cost.

Project A: Forage Crop Seed Production

This project was used to encourage and demonstrate pure seed production of grasses and legumes in areas to which they are suited. The following distribution of seed was made:

		No. of Applications	Quantity Distributed (lbs.)
Grimm Alfalfa	Registered	20	950
Ladak Alfalfa	Registered	40	2,000
Perax Alfalfa	Registered	9	460
Altaswede	Registered	14	750
Alsike	Field Inspected	9	385
Creeping Red Fescue	Registered	7	320
Red Canary Grass		5	170
TOTAL		104	5,035

Applications were received from sixteen District Agriculturists' territories.

Project B: Pasture Improvement

This project was used to provide a means of demonstrating the value of improved pasture mixtures and pasture management practices. One hundred and twenty-six applications for improved mixtures were received from farmers in twenty-one District Agriculturists' territories. The following quantities of seed were used in filling them:

Alfalfa	3,275 lbs.	Red Top	47 lbs.
Sweet Clover	94 lbs.	Kentucky Blue	56 lbs.
Alsike	547 lbs.	White Dutch	20 lbs.
Altaswede	861 lbs.	Slender Wheat Grass	18 lbs.
Brome	4,506 lbs.	Alsike-Timothy Mixture	55 lbs.
Timothy	354 lbs.	Orchard Grass	60 lbs.
Creeping Red Fescue	2,289 lbs.	Alfalfa-Sweet Clover, 94%-6% Mixture	168 lbs.
Crested Wheat Grass	205 lbs.		

In addition, fertilizer was supplied to forty-one applicants

who had established pastures in 1948 under the project. The following quantities were used:

Ammonium Sulphate	4,000
Ammonium Phosphate (11-48)	2,720
Ammonium Phosphate (16-20)	8,610

Project C: Soil Conservation and Weed Control With Forage Crops, Cereals and Fertilizers

See section of report dealing with soil conservation and weed control.

Project D: Field Peas

This project was designed to demonstrate the value and usefulness of field peas in mixed farming areas. Twenty bushels of Early Blue peas were supplied to five applicants in two District Agriculturists' territories.

Project E: Field Demonstrations—Crops and Fertilizers

This project was used to demonstrate the value of different kinds and varieties of field crops and in some instances the value of fertilizers on crops. Seed and fertilizer were supplied direct to District Agriculturists without cost. Quantities allocated to each District Agriculturist were limited. Eleven District Agriculturists used the project.

Under the project the following quantities of seed and fertilizer were used:

Alfalfa	130 lbs.	Slender Wheat Grass	1 lb.
Alsike	30 lbs.	Tall Wheat Grass	1 lb.
Altaswede	34 lbs.	Rescue Wheat	6 bus.
Timothy	35 lbs.	Marquis Wheat	4 bus.
Brome	142 lbs.	Ajax Oats	3 bus.
Creeping Red Fescue	150 lbs.	Larain Oats	5 bus.
Crested Wheat Grass	101 lbs.	Eagle Oats	4 bus.
Sweet Clover, White Blossom	15 lbs.	Olli Barley	4 bus.
Sweet Clover, Yellow Blossom	65 lbs.	Newal Barley	2 bus.
Ammonium sulphate	300 lbs.		
Ammonium phosphate (11-48)	1,050 lbs.		
Ammonium phosphate (16-20)	450 lbs.		

Project F: Crop Variety Demonstration Plots

This project was used by District Agriculturists for the establishment of demonstration plots of cereal and forage crops as a community project. In many cases field days were held at the plots where crop varieties and related subjects were discussed by the District Agriculturist or other competent persons. Seed and fertilizer for twenty-seven demonstration plots were supplied to eleven District Agriculturists.

FORAGE CROP SEED PRODUCTION

Production of all the commonly grown forage crop seeds showed a marked decrease in 1949 from 1948. This was largely the result of a dry period through the spring and early summer over all of central Alberta, followed by a severe frost on September 10th over central and northern Alberta when temperatures as low as 12° above zero were recorded. Other factors contributing to the decrease in production of alsike and altaswede clover seed were the drop in price of seed experienced in 1948 and severe winter killing in the spring of 1949. These two factors operated to reduce acreage drastically. Besides reduced produc-

tion there was also a serious lowering of quality as a result of adverse weather conditions.

The following figures give the estimated forage seed production in Alberta of the most important forage seed crops for the years 1944 to 1949 inclusive.

	1944	1945	1946	1947	1948	1949
Alfalfa	2,500,000	4,000,000	3,500,000	2,500,000	9,600,000	3,500,000
Sweet Clover	4,000,000	4,000,000	5,000,000	6,000,000	12,960,000	8,000,000
Red Clover						
(Atlaswede)	475,000	1,300,000	850,000	1,500,000	6,000,000	2,000,000
Alsike	500,000	1,200,000	1,000,000	2,000,000	6,500,000	2,000,000
Timothy	1,200,000	1,000,000	750,000	150,000	200,000	140,000
Crested Wheat	250,000	200,000	100,000	50,000	60,000	60,000
Brome Grass	4,000,000	4,000,000	4,500,000	4,000,000	4,000,000	2,000,000
Creeping Red Fescue	300,000	850,000	250,000	500,000	1,400,000	1,000,000
TOTAL	13,225,000	16,550,000	15,950,000	16,700,000	40,560,000	18,640,000

Forage seed prices remained high and in many cases were higher than in 1948.

Marketing facilities continued to expand. There was a large number of handling organizations and competition was keen. The Alberta Seed Growers' Co-operative, with its affiliated District Associations made further improvements in its well equipped seed cleaning and warehousing establishment at Camrose. Four smaller plants and twenty-four warehouses of the Co-operative for assembling seed shipments were operated at other points in the Province. Field Superintendents at Red Deer, Thorsby, Westlock, Falher and Peace River were in charge of buying and selling forage crops and cereal seeds for the Co-operative. Other Co-operatives at Grande Prairie and Pincher Creek provided seed cleaning and marketing services to seed growers in the respective areas. These Co-operatives also made seed available to farmers.

WANHAM PROJECT SEED DISTRIBUTION

In 1948 and 1949 the Department of Lands and Forests leased to Veterans half-section holdings north of Wanham. Approximately two hundred and fifty acres had been broken on each parcel. In order to ensure that settlers did not use weedy grain for seed, clean seed was made available which the settlers agreed to use. Most of the twenty settlers who obtained seed in 1948 suffered crop failure by drought and frost. In 1949 seed was supplied to a total of forty-four settlers. A total of 5,358 bushels of wheat, 5,760 bushels of oats and 3,984 bushels of barley were distributed. Registered and certified seed was supplied. The varieties were Thatcher wheat, Ajax, Larain and Victory oats, and Montcalm and Olli barley. Fair to good crops were harvested by the Veterans in 1949.

PRODUCTION AND SALE OF REGISTERED AND CERTIFIED SEED

The European export market which absorbed large quantities of registered and certified seed wheat produced in 1946 and 1947 took greatly reduced quantities of the 1949 crop and at much lower prices. The acreage seeded to these crops in 1949 was therefore reduced. Drought and frost took a heavy toll so production was even lower than acreage figures would indicate.

In the following table a summary of estimated yields is given

of cereal and flax crops inspected for registration and certification over a four-year period.

ESTIMATED YIELD —(BUSHELS)				
Kind	1946	1947	1948	1949
Wheat	44,259	1,111,669	2,349,000	1,153,736
Oats	1,173,039	1,719,424	2,250,000	702,384
Barley	232,524	392,389	788,000	215,988
Flax	26,273	58,551	175,000	12,000

These production figures are still greatly in excess of normal distribution in the province. However, with no export outlets in prospect, growers were not preparing much grain for inspection and sale as registered and certified seed. Some was being sold in bulk as seed and a great deal was being marketed as commercial grain.

In the following table a summary is given of acreages of grass and legume crops inspected for registration and certification over a four-year period.

	REGISTERED (ACRES)				CERTIFIED (ACRES)			
	1946	1947	1948	1949	1946	1947	1948	1949
Alfalfa	4,739	9,029	10,888	9,640	427	678	555	502
Brome	184	56	186	175	11,160	11,452	10,861	6,234
Creeping Red Fescue.....	110	168	317	86	1,597	2,890	5,810	5,249
Crested Wheat	11	11	.....	20	.....	325	110	115
Red Clover (Altaswede) ..	40	125	263	251	.....	258	237	288
Sweet Clover .....	.....	.....	130	55	100	374	758	92

The general reduction in acreage inspected was the result of an unfavorable season rather than a reduced acreage in crop. Under the circumstances some growers either did not apply for inspection or cancelled their applications.

THE ALBERTA CROP IMPROVEMENT ASSOCIATION

This Association has concerned itself particularly with the problem of encouraging the wider use of registered and certified cereal grains for the purpose of maintaining or improving the quality of commercial grain. Through the co-operation of Grain Companies and the Alberta Seed Growers' Co-operative, arrangements were made whereby grain elevator agents were authorized to accept farmers' orders for registered and certified seed grain. Since a large crop of such seed was produced stocks should have been ample but growers had no assurance that there was sale for seed and so new growers particularly were reluctant to process it for sale. The result was that many orders, mainly for wheat and oats, were not filled.

The Association is directed by a committee which represents the North-West Line Elevators Association; the farmer-owned elevator companies; the Plant Products Division, Dominion Department of Agriculture; the Alberta Seed Growers' Co-operative; the Canadian Seed Growers' Association (Alberta Branch); the University of Alberta and the Alberta Department of Agriculture.

Registered and certified seed grain marketed through the Alberta Crop Improvement Association in 1949 in comparison with previous years is as follows:

	1942	1943	1944	1945	1946	1947	1948	1949
Wheat	5,961	3,000	9,232	20,014	23,728	35,179	45,279	32,951
Oats	34,659	10,500	16,001	11,670	26,560	35,235	43,462	34,898
Barley	4,349	2,500	6,579	2,450	15,492	23,972	19,616	14,860
Flax	868	.....	1,215	328	1,194	11,321	10,419	329
Rye .....	.....	.....	.....	.....	208	346	105	59
TOTALS	45,837	16,000	33,037	34,462	67,182	106,053	118,881	82,597

At the end of the year orders for seed from the 1949 crop were considerably greater than at the same time in 1948. This would indicate a probable large distribution in the early months of 1950.

A great deal of credit is due to grain companies and elevator agents for the success of this method of seed distribution. Experienced growers co-operated well in having seed cleaned, sacked and sealed as early as possible as well as by filling orders promptly. It should be noted too that farmers who marketed wheat as seed did not receive participation certificates and so will not benefit by additional payments made by the Wheat Board on wheat sold through regular channels.

THE CANADIAN SEED GROWERS' ASSOCIATION (Alberta Branch)

Regional branches of the Canadian Seed Growers' Association have as their main function the dissemination of information relative to seed growing. They also endeavor to make farmers better-seed conscious and by so doing improve the quality of crops produced. Such a programme increases the demand for registered seed. As this is a crop improvement programme and since the Alberta Branch endeavors to serve the entire Province, the Supervisor of Crop Improvement, a member of the staff of the Field Crops Branch, acts as Secretary.

1. Field Days

In 1949 the programme of the branch included Field Days at Beaverlodge, DeBolt, Lacombe and Airdrie. All meetings were well attended. The Peace River Field Days were held with the co-operation of the Dominion Experimental Station at Beaverlodge. The Lacombe and Airdrie Field Days were held with the co-operation of the Dominion Experimental Station at Lacombe, the former on the station and the latter on the farm of Mr. Victor Watson, a large-scale grower of registered seed.

2. Elite Growers' Schools

Two-day programmes were carried out at Lacombe and Beaverlodge. One day was devoted to a regular registered seed growers' field day and the other to an elite seed growers' school. About 60 interested growers attended each of these schools. Instruction was given by Mr. C. A. Weir, District Supervisor, Plant Products Division, Dominion Department of Agriculture, and A. M. Wilson, Field Crops Commissioner, assisted by Field Crops personnel at the stations. These schools were considered to be a successful experiment and will likely be repeated annually.

3. Annual Meetings

The Alberta Branch was host to the Canadian Seed Growers at their Annual Meeting held at the University of Alberta June

15, 16 and 17, 1949. This function was an outstanding success. About 450 seed growers and others interested in seed production attended, making it the largest annual meeting of the Association on record. Valuable assistance in carrying out the programme—business and social—was given by the Alberta Department of Agriculture, the Dominion Department of Agriculture, the University of Alberta, seed and grain handling organizations, Canada Malting Company and Imperial Oil.

The Annual Meeting of the Alberta Branch was held at the University on June 14th with about 300 in attendance.

4. Freight Rates Brief

The Alberta Branch joined with other organizations in Western Canada concerned with crop improvement in having a brief prepared and presented to the Royal Commission on Transportation. The purpose of the brief was to present the case for retention of a preferential freight rate on seed. Mr. F. L. Dickinson of the United Grain Growers, Winnipeg, prepared and presented the brief.

5. Publicity

Five circular letters were prepared and mailed to growers during the year. The C.S.G.A. publication "First Steps for Growers of Registered Seed" was made available to growers while the supply lasted. When it was not available the Branch publication "Hints for Growers of Registered and Certified Seed" was used.

In order to promote early ordering of seed for 1950 "spots" were broadcast over one station at each of the centres Edmonton, Calgary, Lethbridge and Grande Prairie. These were repeated once a week for four weeks late in November and early in December. In addition publicity material was supplied to CBX (the CBC station in Alberta) and to the A.L.C. (Alberta Livestock Co-operative) for use on farm broadcasts, also to the Alberta Wheat Pool for use in connection with their press and radio publicity.

The two-dollar membership fee put into effect in 1947 was collected in 1948-49 for the Branch by the Central Office at Ottawa. Eighteen hundred and ninety-nine members paid the fee. The Branch is now in a very favorable financial position.

6. C.S.G.A. Membership

Membership in the Canadian Seed Growers' Association reached an all-time high in the 1948-49 season. The following table gives total membership of the C.S.G.A. for Canada and for Alberta for the years 1939 to 1948 inclusive:

Year	Alberta	Canada	Alberta in % of Canada
1939	344	3,046	11.3
1940	349	3,491	10.0
1941	315	3,035	10.4
1942	274	2,637	10.4
1943	244	2,523	9.7
1944	340	2,586	13.1
1945	522	2,731	19.1
1946	756	3,402	22.2
1947	1,694	4,670	36.3
1948	2,073	5,894	35.2

At the end of the year it was obvious from field inspections

made that there was a marked reduction in the number of growers in 1949.

THE ALBERTA VARIETAL ZONATION COMMITTEE

This is a committee of the Provincial Seed Board. Its purpose is to co-ordinate the findings of the various experimental agencies in the province with respect to grain varieties and to recommend those best suited to the various soil climatic zones. The committee is composed of representatives of the following: Departments of Plant Science and Soils, University of Alberta; Provincial Field Crops Branch and Dominion Experimental Farms, Science and Production Services. The annual meeting of the committee was held in December at which a few changes were made in the list of recommended varieties.

Marquis wheat and O.A.C. 21 barley were dropped and the new oat variety, Beaver, was added in Zone 4. This left the recommended grain varieties as follows:

Winter Wheat—Kharkov in Zones 2, 3 and 4; Yogo in Zones 1 and 2.

Hard Spring Wheat:

Zone 1—Thatcher	Zone 3—Saunders, Thatcher.
Zone 2—(Saunders)* and Thatcher	Zone 4—Saunders, Thatcher.
Sawfly areas—Rescue	

* Recommended only in western and northern parts of Zone 2.

Oats:

Zone 1—Ajax, Victory	Zone 3—Ajax, Eagle, Larain, Victory.
Zone 2—Ajax, Eagle, Victory	Zone 4—Beaver, Larain, Victory.

Malting Barley:

Montcalm and Olli in Zones 2, 3 and 4.

Feed Barley:

Zone 1—(Dry Land) Compana, Titan.	Zone 3—Montcalm, Newal, (Olli)**
Zone 2—(Dry Land) Compana, Newal, (Olli)** Titan.	Zone 4—Newal, Olli.

Irrigated Areas—Newal, Titan, Trebi.

** For wild oat control and where early maturity is essential.

N.B.—Varieties are listed alphabetically, not in order of merit.

The recommendations of this committee were printed in bulletin form by the Field Crops Branch and widely distributed throughout the Province.

PRODUCTION OF SPECIALTY CROPS

Soft White Spring Wheat

This crop, which is used for making pastry flour, was grown on an increased acreage in 1949. The variety Lemhi is the only one being grown. It has the desired low protein content when grown on irrigated land and on the gray-wooded soils and consistently out-yields hard red spring wheat varieties.

Since there is a limited market for it the entire acreage being grown is under contract with Milling Companies. These Companies signed contracts with farmers for about 30,000 acres in 1949. About 5,000 acres were in the gray-wooded soil area west of Edmonton and the balance under irrigation.

Mustard Seed

Mustard seed has been grown successfully under dry land conditions in southern and eastern Alberta for several years. Since the market for it is limited it is practically all grown under contract with commercial firms. The 1948 crop did not all find a market and so contracts were signed for only a small acreage in 1949.

INTERNATIONAL SEED SHOWS

For several years the Department of Agriculture has given assistance to exhibitors in the seed classes at the Royal Agricultural Winter Fair, Toronto, and the International Hay and Grain Show, Chicago. In 1949 exhibits were assembled and shipped to the Shows by the Field Crops Branch with shipping charges both ways being paid by the Branch. In addition, supervision of the exhibits at the Shows was given by a representative of the Branch and special premiums were paid as follows:

All prize monies were duplicated in connection with the International and were increased by 50% in connection with the Royal. A special honorarium of \$25 for each first prize in the classes for hard red spring wheat, white oats, six-rowed barley, alfalfa, alsike, red clover, brome, red fescue and russet (Netted Gem) seed potatoes was paid in connection with the Royal, this to be increased to \$50 for championships in the classes for hard red spring wheat, white oats and six-rowed barley. On exhibits at the International a special honorarium of \$25 was paid for first prizes and increased to \$100 for championships in hard red spring wheat, oats, barley, alfalfa and brome grass.

Winners of first prizes and championships were as follows:

Royal Agricultural Winter Fair

Grand Champion	Oats	J. T. Eliuk	Hairy Hill
Grand Champion	barley	J. T. Eliuk	Hairy Hill
Reserve Grand Champion	Wheat	R. Sharpe	Drumheller
Reserve Champion	Oats	Gordon S. Moyer	Elmworth
Reserve Champion	Rye	T. E. Brown	Cassils
Reserve Champion	Small Seeded Legumes	N. J. Enns	Gem
First Prize	White Spring Wheat	T. G. Wall	Coaldale
First Prize	Alsike Clover	T. Corlett	Clairmont
First Prize	White Field Beans	T. E. Brown	Cassils
First Prize	Sweet Clover	S. Harker	Glenwood
First Prize	Oats, White Early (Jr. Section)	Henry Unruh	Vauxhall
First Prize	Oats, White Medium or Late (Jr. Section)	Norman Boulton	Abee
First Prize	Barley, 6-rowed (Jr. Section)	V. Lewis	Bon Accord

In addition, 4 second place awards, 5 third place awards and 30 other awards were won by Alberta exhibitors.

International Hay and Grain Show

Championship	Oats	S. H. Pawlowski	Spedden
Reserve Champion	Alfalfa	E. Laganiere	Rosemary
First Prize	Alsike	T. Corlett	Clairmont
First Prize	Trebi Barley	T. E. Brown	Cassils
First Prize	Sweet Clover	Mrs. Emma Inda	Brooks
First Prize	Brome	H. M. Bailey	Fairview

In addition three second place awards, six third place awards and twenty-six other awards were won by Alberta exhibitors.

SEED CONTROL AREAS ACT

One "Seed Control Area" known as the "Wanham Seed Control Area" was set up under this Act in 1949. It comprises an

area north of Wanham which was cleared and broken under The Land Clearing and Breaking Act and leased in half section parcels to veterans. This was the first area to take advantage of The Seed Control Areas Act. That area, being entirely new, is well adapted to such a plan. Under the regulations forage seed production is restricted to Ladak alfalfa; Altaswede red clover; alsike clover; brome and creeping red fescue.

SEED DRILL SURVEY

In the spring of 1949 the Branch initiated a seed drill survey with a view to determining the purity from the standpoint of weeds and other crop seeds of seed grain being used in Alberta. District Agriculturists and Municipal Field Supervisors collected samples from seed drills in twenty-two Municipal Districts and one Local Improvement District. A total of 1,939 samples were collected. Germination tests on samples from three Municipalities and the one L.I.D., and purity analysis on all the samples, were carried out by the Line Elevators Farm Service, Winnipeg.

The following is a summary of seed grades of samples collected in this survey.

Municipal District	No. of Samples	Seed Grade			Rejected
		No. 1	No. 2	No. 3	
1. Athabasca No. 103	40	5	2	7	26
2. Beaver No. 73	55	13	2	14	26
3. Cornich No. 44	90	15	13	9	53
4. Falher, L.I.D. No. 130 ..	84	12	12	16	44
5. Grande Prairie No. 127..	71	8	15	19	29
6. Kneehill No. 48	98	34	8	20	36
7. Lacombe No. 64	78	15	15	12	36
8. Lamont No. 82	80	10	4	14	52
9. Leduc No. 75	159	25	11	25	98
10. Minburn No. 72	74	14	6	12	42
11. Morinville No. 91	103	27	25	20	31
12. Mountain View No. 49 ..	75	12	5	4	54
13. Smoky Lake No. 89	116	22	9	20	65
14. Starland No. 47	57	31	2	15	9
15. Stony Plain No. 84	102	5	5	23	69
16. Strathcona No. 83	103	21	6	17	59
17. Turner Valley No. 32 ..	112	37	6	21	48
18. Vermilion River No. 71 ..	24	10	2	4	8
19. Westlock No. 92	100	15	11	17	57
20. Wetaskiwin No. 74	103	18	11	24	50
21. St. Paul No. 86	99	33	14	9	43
22. Cochrane No. 6	96	27	5	18	46
23. Wainwright No. 61	20	4	3	2	11
TOTALS	1,939	413	192	342	992
Percentage		21½	10	17½	51

Where germination tests were not carried out samples were graded on the assumption that percentage germination was satisfactory for the grade, a sample would qualify for under purity standards.

These results indicate a serious lack of appreciation of the value of clean seed and present a challenge to those who are concerned with Crop Improvement. A similar survey was made by the Dominion Seed Branch and reported in their bulletin "Weeds and Weed Seeds" in 1935. Of 1,225 samples collected in Alberta 13.3% graded No. 1 seed, 15.4% graded No. 2 seed, 22.3% graded No. 3 seed and 49% graded rejected. Obviously the situation with respect to weed seeds in seed grain has not improved in the last 15 years.

Germination tests were carried out on the samples collected by the Municipal Districts of Grande Prairie, Westlock, Atha-

basca and Local Improvement District No. 130 at Falher. The number of samples in each district rejected for germination ranged from 10 to 28% of the number collected, and individual germinations were as low as 10%. The result also demonstrated that the use of formalin for seed treatment was detrimental to germination, particularly of wheat, and certainly should not be used on wheat that was already weakened by frost.

The results of this survey were used and can be used in the future by the Department of Agriculture, Municipalities and other agencies in impressing upon farmers the fact that the use of clean seed is fundamental to good farming.

HORTICULTURE

In September, 1949, subjects pertaining to Horticulture in the province were, for the first time, placed under the supervision of Mr. P. D. McCalla, Horticulturist, Field Crops Branch, Parliament Buildings, Edmonton. This new office has taken over several previously existing programmes and has made a start on others in connection with the furtherance of horticultural development in Alberta. It is felt that the increased interest in horticulture warrants the services of a Supervisor.

HORTICULTURE ADVISORY COMMITTEE

This Committee is appointed by the Minister and tends to act in an advisory capacity to the Department. One meeting was held during the year. The Committee, composed of both Government and private members, compiles the bulletin "Recommended Horticulture Varieties and Zonation Map for Alberta." This valuable publication recommends the best varieties of fruit, vegetables and ornamentals to be grown in the Province. For this the province is divided into seven regions based on soil and climatic conditions. The Committee revises this bulletin from time to time so that it is always abreast of the latest developments in horticultural research.

HORTICULTURAL SOCIETIES

During the past year a survey was conducted to determine the number of active Horticultural Societies in existence in Alberta. The replies from the questionnaire sent out show that at the present time twenty-one societies are active in encouraging and assisting horticulture in the province.

A proposed constitution for a Provincial Horticultural Society was drawn up and copies were sent to many of the local Societies for their suggestions and criticisms. The response to this request was very gratifying and a summary of the recommendations made has been prepared and will be presented to the Horticulture Advisory Committee at its 1950 meeting.

DEMONSTRATION ORCHARDS

During the spring of 1949 enough fruit trees were shipped to establish eleven new demonstration orchards, which are established in all areas of the province. The purpose of these is to show farm people that fruit trees can be grown anywhere in Alberta. A second but equally valuable reason is for testing

new varieties. From their performance in these plantings it is possible to either recommend new varieties if they are a decided improvement over those in current use or to discard them before they become generally distributed. In this way many growers are saved the disheartening experience of seeing their trees die because the variety is not suitable.

FARMSTEAD PLANNING

Requests for assistance in farmstead planning were numerous in 1949. It was not possible to draw detailed plans for each applicant, but assistance was given and will continue to be given in the future by the Supervisor of Horticulture when his services are requested by the local District Agriculturist. The Supervisor of Horticulture will endeavor to visit each District Agriculturist's area during 1950 to assist in every way possible those people who are anxious to improve the appearance of their farmsteads by tree planting.

TREE PLANTING

During the spring of 1949 approximately 65,000 trees were planted by the Department's two tree planters, which were used for the first time in Alberta, and proved successful in every way. One planter was used for shelter belt planting in central Alberta while the other gave assistance to farmers in the Peace River area. The trees thus planted represented only a very small percentage of the actual number planted for windbreak and shelter belt purposes. Similar assistance is planned in 1950, however, the tree planting program is still limited to the number of trees available through the Forest Nursery Station, Indian Head, Saskatchewan, and the Alberta Forest Nursery Station at Oliver.

SOIL CONSERVATION AND WEED CONTROL

WEED CONTROL

Weather conditions in 1949 favoured the eradication of some weeds, but perhaps stimulated the reproduction of others. The dry spring which prevailed until July in the northern part of the province gave almost perfect conditions for the eradication of quack grass but on the other hand few weed seeds germinated and those that did grow became so toughened that chemicals were less effective in eradicating them.

The topic of weed control continued to be popular. More farmers are becoming weed conscious and are demanding of the services available through Agricultural Service Boards, Weed Supervisors and Weed Inspectors. District Agriculturists, Field Supervisors and Weed Inspectors held approximately 350 meetings throughout the year, attended by approximately 8,000 farmers.

WEED SURVEY

The Field Crops Branch co-operating with the Division of Botany and Plant Pathology of the Dominion Department of Agriculture, conducted a survey on the prevalence of the follow-

ing weeds in Alberta: Hoary Cress [*Lepidium Draba*], Leafy Spurge [*Euphorbia Esula*], Russian Knapweed [*Centaurea repens*], Field Bindweed [*Convolvulus arvensis*], Toad Flax [*Linaria vulgaris*], Perennial Sow Thistle [*Cirsium arvense*]. Information was obtained on the prevalence of these weeds by a third year student in agriculture personally contacting all the Field Supervisors or Weed Inspectors in all Municipalities and Improvement Districts.

The following table summarizes the degree of infestation of the most noxious weeds within the province.

No. of Infestations in Province

Degree of Infestation	Hoary Cress	Leafy Spurge	Russian Knapweed	Field Bindweed	Toad Flax	Perennial Sow Thistle	Canada Thistle
Light	535	205	66	146	980	6,420	5,280
Medium	156	15	....	11	140	12,992	10,680
Heavy	134	28	..	8	155	2,552	2,363
Totals . . .	825	248	66	165	1,275	21,964	18,323

Each infestation represents one-quarter section varying with patches ranging from three to one hundred and sixty acres.

The infestations of hoary cress, leafy spurge and field bindweed are most prevalent in the south-western portion of the province with the heaviest occurring around Calgary, Lethbridge and Cardston. Hoary Cress is causing some trouble in the Grande Prairie area.

Toad flax is found scattered throughout the central and northern parts of the province with the most serious infestations around Vermilion, Wainwright and Eaglesham in the Peace River block. Scattered patches are quite widespread around Edmonton and extend as far south as Olds.

Light patches of Russian knapweed occur in the southern part of the province.

Perennial sow thistle and Canada thistle are more widespread, appearing in varying degrees on almost every farm except those in the dry areas. The heaviest infestations are around lake shores in the St. Paul and Lac la Biche areas.

FIELD DEMONSTRATIONS

Many Service Boards through their District Agriculturist or Field Supervisors, and some I.D. Weed Inspectors demonstrated weed control in a practical way by making use of field demonstrations. The Field Crops Branch assisted with the establishment of sixteen cereal-fertilizer, and twenty-one grass-legume, weed control demonstrations involving the use of 171 bushels of cereals and flax, 3,100 pounds of fertilizer and 7,420 pounds of grasses and legumes.

Fall rye was not used as extensively as a weed control crop in 1949 as in previous years largely because of the more favourable price relationship of cereals to rye.

District Agriculturists and Field Supervisors, assisted by the staff from the Field Crops Branch whenever and wherever possible, arranged 86 field days attended by 3,256 people at the

sites of cereal demonstrations established in 1949 or grass-legume demonstrations seeded in 1948.

CHEMICAL WEED CONTROL

Farmers used more chemicals for weed control purposes during 1949 than in any year to date. Even more, probably would have been used had the dry weather in central and northern Alberta not delayed application of 2,4-D until after July 15th. According to surveys made, farmers in Alberta treated 1,900,000 acres with 2,4-D. Of this amount 76% was sprayed and the balance dusted. Most of the acreage was done with privately owned ground machines. Limited use was made of aircraft on a custom basis. The greater portion of the dusting was done in the southern part of the province where water is comparatively scarce, fields are large, and danger of drifting chemical affecting susceptible crops is minimized. The survey indicates that farmers are satisfied with results obtained with 2,4-D and plan to continue using it.

Many miles of roadsides were chemically treated by Municipalities both for weed and brush control. The newer chemical 2,4-5-T or mixtures of it with 2,4-D proved reasonably satisfactory. Some of the brush along irrigation canals was treated by aircraft. The favourable brush and weed kills on roadsides, etc., would indicate that more will be treated in the future.

Staff from the Field Crops Branch organized and supervised thirty-one field trials on weed control with chemicals. Efforts were directed toward the field use of newer chemicals, mixtures of chemicals and applications of chemicals in an attempt to at least partially control perennial weeds more or less resistant to selective herbicides.

Tartary buckwheat was treated at four different locations with sinox, 2,4-D and 2,4-5-T. Applications of 2,4-D at early growth stages gave some control and the sinox showed only partial control although it was applied under very adverse conditions of drought.

Toad flax was treated with sinox, TCA (trichloroacetate), 2,4-D, polybor chlorate and sodium chlorate at five different locations. Sodium chlorate controlled toad flax but is an expensive method. The other chemicals showed different degrees of burning of top growth, but in all cases regrowth was vigorous.

Leafy spurge, Russian knapweed and field bindweed were treated with TCA, sinox, 2,4-D and 2,4-5-T. The 2,4-D, especially where the weeds were growing amongst grass, gave the best practical results.

Roadside trials were made at two locations with 2,4-D, 2,4-5-T and a mixture of both. The mixture gave greater control than either chemical singly.

Couch grass was treated with TCA at several locations. Results were very promising and indications point to the use of TCA for removal of couch from fence lines and eradication of small patches, etc.

Field trials, mixing 2,4-D with insecticides to control both weeds and grasshoppers with one spraying application were conducted. Detailed report of same appears under the heading

"Grasshoppers" in the Crop Protection section of the Field Crops Branch report.

In addition, District Agriculturists, Field Supervisors and Weed Inspectors had 107 weed control demonstrations.

The policy of distributing sodium chlorate through municipal offices and Weed Inspectors to farmers at cost was continued. Poundage used increased. Following is the quantity used in pounds for each of the last five years:

1945—100,000; 1946—128,000; 1947—100,000; 1948—137,000; 1949—180,500.

ROADSIDE SEEDING

The Field Crops Branch co-operating with the Department of Public Works seeded down the ditches of 1,067 miles of Government highways to grass. The Department of Public Works paid for the seed and Field Crops Branch did the actual seeding. All newly constructed highways from the Northern to Southern ends of the province were seeded. A total of 58,029 pounds of grass and legume seeds were used on this project.

The Branch also provided 13,800 pounds of grass seed which was used to demonstrate the value of seeding road ditches to grass in nineteen Municipalities. Municipalities bought an additional 20,000 pounds of grasses and legumes with which to continue the program.

CROWN LANDS

Weed control on Crown lands continues to be difficult in many areas because most of the weeds are inaccessible and therefore difficult to eradicate. The Department of Lands and Forests has issued special lease agreements on weed-infested Crown lands where the Field Crops Branch has so recommended. This procedure has made it possible for the lessee to eradicate weeds on Crown lands with the assurance that he will be compensated in the duration of the lease.

The Field Crops Branch supplied suitable forage seed mixtures for controlling weeds on Crown lands provided lease agreements were properly completed and provided the lessee followed recommended seeding practices of the Department.

AGRICULTURAL SERVICE BOARDS

Twenty-nine Agricultural Service Boards operated in 1949. Agreements were not completed with one municipality because their supervisor was directed to undertake municipal work other than agricultural projects as included in The Agricultural Service Board Act. Seven Field Supervisors resigned to take other employment and one transferred from one Municipal District to another. In every case where Supervisors resigned, new appointments were made. The control of weeds on farms and supervision over poorly farmed land was well looked after in Municipalities with Agricultural Service Boards. Co-operation between the Boards and the farming public was good throughout 1949. Fewer notices to destroy weed infested crops are being issued by Boards because they are applying long term corrective measures which control weeds and make the destruction of crops unnecessary.

Twenty-three Boards co-operated in a Seed Drill Survey by collecting 1,898 samples from seeding equipment working in the field. A detailed report on this survey appears under Seed Drill Survey of the Crop Improvement section of Field Crops Branch report.

Agricultural projects other than weed control undertaken by Boards include soil conservation practices, tree-planting programs, Save-the-Soil Campaigns, seed policies and encouragement of seed cleaning plants.

Boards also assist in conducting livestock improvement projects; and in the control of T.B., Bang's and warble flies.

FIELD SERVICES

The Field Crops Branch employed twenty-three Weed Inspectors and five Weed Supervisors. These Inspectors were responsible for the administration of The Noxious Weeds Act in the Improvement Districts of the province. Each Inspector was required to keep a card index of farms and farmers visited in order to insure continuity of work from season to season.

Twenty-nine full time Field Supervisors were employed by Municipal Districts with Boards and thirty-three part-time men were also employed during the summer months. Municipalities without Service Boards employed forty-two Inspectors. Total field force during the summer months of 1949 was 132 men.

The following meetings, conferences, etc., were held in 1949 in an effort to assist weed workers with their problems. Annual Service Board Conferences, regional meetings of Weed Inspectors held in the early summer at Spirit River, Lethbridge and Edmonton and fall regional meetings of Field Supervisors and District Agriculturists at Vegreville, Edmonton and Calgary.

SEED CLEANING AND SEED SERVICES

The Department of Agriculture continued to encourage the construction of improved seed cleaning facilities throughout the country. Municipal seed cleaning plants as provided by authority of The Agricultural Service Boards Act were built at Westlock, Wetaskiwin and Morinville during 1949. These plants are built for the purpose of providing farmers within the municipality with clean seed and while they may be used to clean registered grain for outside markets, their principal purpose is for the prevention and control of weeds.

Permits were issued to properly constructed and operated seed cleaning plants during 1949. Country elevators, where there is a possibility that weed seeds and grain can become mixed as it passes through poorly constructed bins and legs, etc., were not given permits except in places where no other facilities were otherwise available and then only on a temporary basis.

SOIL CONSERVATION

Wind erosion was much more severe during 1949 than 1948. Many dust storms occurred throughout all parts of the province during the dry spring and dry fall periods. Soil drifting occurred

in the central and northern parts of Alberta where it has not been serious since 1937. Many roadside ditches in the Edmonton area were completely filled with fine silt off of land summerfallowed in 1948. Drifting in the southern part of the province was not as extensive as in 1948, largely because of better moisture conditions and also due to the fact that farmers preserved more trash cover than in the preceeding year. The Field Crops Branch has continued to advocate the use of such farming practices that include rotation cropping with grasses and legumes, shallow cultivation, trash cover, ridging summerfallow in the fall and the use of machines which do not pulverize the soil. Particular emphasis has been placed on the role of trees in conserving soil and moisture.

Water erosion was not as severe during 1949 as 1948. Most of the water erosion which did occur in 1949 was from heavy storms rather than spring run off.

In 1949 a soil conservation project was added to the "Crop Improvement Demonstration Policy". This project was designed to encourage District Agriculturists and farmers to establish field demonstrations relative to the conservation and use of soil. Farmers willing to co-operate with the District Agriculturists and who are prepared to have their fields used for demonstration purposes may secure grass and legume seed at half the cost for an area not exceeding ten acres per farm. For weed control with early maturing crops the Department paid one-half the cost of cereals and fertilizer for a maximum of seven acres. The seeds supplied under this project in 1949 were largely grasses and legumes which were used to demonstrate that land starting to erode or which was weed infested could be reclaimed by seeding it down to forage crops. In 1949 demonstrations of forage crops were established on forty-eight farms and cereal crop demonstrations on five farms. Restrictions were placed on the number of demonstration fields in any District Agriculturist's territory.

Several gullies were filled in during 1949 as the result of Service Board efforts. It was gratifying to note that none of the gullies filled in 1947 and 1948 washed out. These demonstrations have proved beyond a doubt that properly constructed and seeded down waterways will not erode.

Soil conservation was a popular subject at farm meetings. District Agriculturists and Field Supervisors, assisted wherever possible by Field Crops staff, stressed the need to practise soil conservation at some 429 meetings attended by 15,254 people.

"SAVE THE SOIL" CAMPAIGN

"Save The Soil" campaigns, which are primarily local projects, organized to conserve our soil by preventing soil erosion and controlling weeds, continue to increase both in number of projects and in number of farmers participating. Such campaigns of a competitive nature create soil conservation interest amongst farm and urban peoples alike. It has been noted that farmers who enter the competition are requesting suggestions and recommendations from District Agriculturists for suitable rotations of crops to conserve soil.

Fifteen such campaigns were held in the province during

1949 with a total of 579 farmers actively taking part in the program. Many of these contestants have planned their cropping practices on a rotation that includes grasses and legumes.

TREE PLANTING

Throughout 1949 the Department of Agriculture encouraged farmers to plant trees not only for farmstead shelterbelts but also as field windbreaks to protect farm lands from wind erosion.

Two Lowther tree planters were purchased in an effort to determine the feasibility of mechanical tree planting on a large scale. These machines worked very satisfactorily after making spacing devices and some minor changes on them. It was found necessary to pull these machines at one-half mile per hour when planting caragana at twelve-inch spacing. For other trees the speed was increased to two miles per hour depending upon the spacing desired. It was necessary to have a three-four plow tractor in order to throttle it down slowly and still have sufficient power to pull the planter. Most of the trees survived the first season in spite of dry planting conditions and less than average rainfall.

A total of 62,500 trees obtained from the Forest Nursery Station, Indian Head, Saskatchewan, were planted on farms in Edberg, Kelsey, Bawlf, Camrose, Wainwright, Burnt Lake, Markerville, Falher, Berwyn and Fairview districts.



TREE PLANTING

This machine is capable of planting one thousand seedlings per hour



RUSSIAN KNAPWEED INFESTATIONS



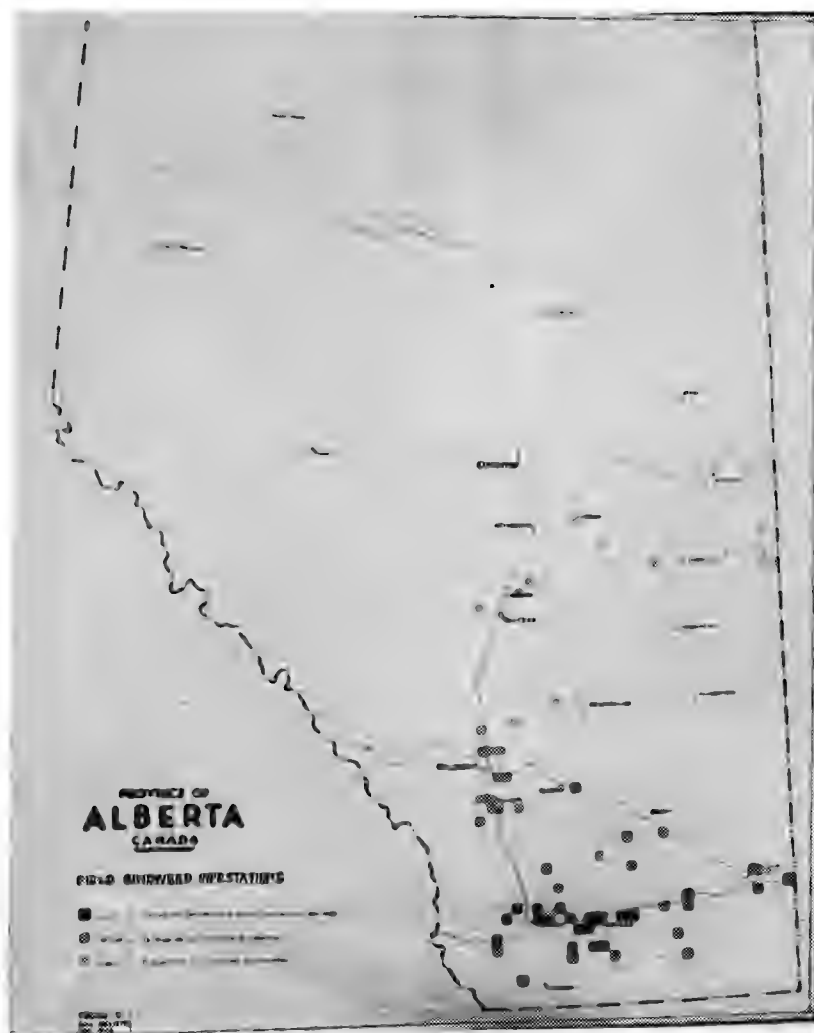
TOAD FLAX INFESTATIONS



LEAFY SPURGE INFESTATIONS



HOARY CRESS INFESTATIONS



FIELD BINDWEED INFESTATIONS

CROP PROTECTION SERVICE

CROP INSECTS

GRASSHOPPERS

The grasshopper outbreak in Alberta in 1949 was one of the most serious since the early 30's. The infested area in the southern and south-central part of the province covered about 11,000,000 acres. In this area the infestation was greater than what is termed "normal".

The area surveyed in 1948 predicted three separate points where outbreaks would be "severe" in 1949. Grasshopper development at these points ran quite true to forecast, and in these areas a heavy campaign was conducted. These three points were as follows:

- (1) Provost-Bodo area—covering about 7 Townships.
- (2) Bow Island-Wisdom area—covering about 9 Townships.
- (3) Retlaw-Chin area—covering about 20 Townships.

Moderate 'hopper infestation occurred along the Saskatchewan boundary starting from Compeer and running south to Cypress Hills—covering a width range of about 24 miles. This same area extended west from Medicine Hat to Lethbridge and Macleod and then north to Carmangay. Isolated moderate infestations also occurred around Chancellor, Rosebud, Michichi and Jenner.

Light infestations appeared in about 15 Townships south of Warner to the Montana boundary and also covered an area of about 2,600 square miles in a block east of a line between Macleod and High River. The infestation was also light from Drumheller east to the Saskatchewan boundary.

In spite of the fact that a heavy hatch covered a wide area, actual crop losses were very small. Two fields are known at Schuler and Hilda where 50% of the crop was destroyed. In the rest of the infested areas losses were confined largely to field margins. This can be attributed in a large part to an effective campaign, which provided materials and poisons at short notice to outbreak areas. Baits and sprays were supplied from 75 mixing stations and distributing points in 1949 as compared with 17 in 1948.

At the end of June there was a sharp local outbreak in Northern Alberta around Faust, necessitating the establishment of a mixing station at that point. Crop damage was small as grasshopper activity was halted by heavy rains in early July. The Franklin gull was also instrumental in keeping the populations down. As many as 60 'hoppers to a square foot were observed in isolated points at Kinuso, Faust and Grouard.

During late winter and early spring 25 meetings were held in the infested areas for the purpose of informing farmers of the predicted outbreak and to urge them to adopt recommended control measures. A total of 1,205 farmers attended these meetings. In addition District Agriculturists held meetings relative to this subject at which 696 farmers were contacted.

Chlordane was the basic insecticide used in preparation of baits, sprays and dusts. 90,000 pounds of technical Chlordane were purchased, and prepared by the government into emulsifiable chlordane concentrate, ready to use as a spray on 'hopper infested land. Emulsifiable chlordane was also used as a poison for baits. In a survey conducted, all farmers expressed satisfaction in the use of the baits, sprays and dusts made available to them.

Under the grasshopper policy, baits were supplied to farmers at no direct charge. Sprays, costing the province \$10.00 per gallon were sold to farmers through Municipalities, Local Improvement Districts and the Special Areas at \$8.00 per gallon (10 lb. active ingredient per gallon), such local government and the province sharing equally the reduction in price. The reduction was based on the equivalent cost of bait to the province and municipality. At a rate of $\frac{3}{4}$ lb. technical chlordane per acre, one gallon covered 14 acres. Ten percent chlordane dusts were also made available to farmers at a comparative reduced price and used at 15c per lb.

The table below compares the extent of infestation and other aspects in the grasshopper campaign for the last four years:

	1946	1947	1948	1949
Acres of land in the area	8,000,000	2,500,000	8,750,000	11,000,000
Acres of crop land menaced	60,000	32,000	195,000	800,000
No. of stations operated	6	11	17	75
Bushels of poisoned bait spread.....	16,000	9,100	56,700	191,000
No. of farms receiving bait	242	107	851	2,780
Estimated acres of crop destroyed....	1,200	1,000	2,000	2,500
Estimated pounds of Chlordane used .....	.....	.....	800	67,000
Acres sprayed by Chlordane.....	.....	.....	1,100	52,000
Acres dusted by Chlordane .....	.....	.....	.....	1,500

Six trials were conducted in the Lethbridge and Medicine Hat area where chlordane sprays were tried alone and in combination with 2,4-D. In addition a new insecticide known as Compound 118 was also tried for 'hopper control. The results were as follows:

(1) Grasshopper control was just as effective with Compound 118 as with Chlordane and Toxaphene when all were used at recommended rates. Residual effect was in favor of Compound 118.

(2) Insect control (grasshoppers) was equally effective at recommended rate of the insecticide whether used alone or mixed with the weedicide.

(3) Chlordane, Toxaphene and 118 appear to be compatible with 2,4-D when both are used at recommended rates.

(4) Compound 118 appears likely to supersede chlordane from the standpoint of effectiveness and cost in grasshopper control campaigns.

WHEAT STEM SAWFLY

There was no significant change in the area this year from that of last, where wheat stem sawfly showed activity although losses from this pest have been considerably reduced. This activity was again confined to the south eastern part of the province involving Crop District 1-7 inclusive and covering approximate-

ly 7,400,000 acres. Infestation was heavy in the district around Warner although a more general use of Rescue wheat in that area has materially reduced the number of sawflies. Farmers around Foremost reported some damage, but this was confined to field margins. A rather heavy damage occurred also in the Milo-Arrowwood district.

There are two efficient control measures at the farmers' disposal, which if instituted, can be very effective in saving wheat losses and reducing the wheat stem sawfly populations. These are:

(1) The use of Rescue Wheat (solid stem).

(2) The use of a trap-crop grown around the edges of the field, consisting of either strips of early seeded wheat or brome grass. (Brome grass seeded along headlands and fence-rows, is the most effective permanent trap-crop that can be grown.) For some reason many farmers in some sawfly-infested areas are reluctant to use these methods even in spite of the fact that either by trap cropping or by changing to Rescue wheat, crop losses can be avoided.

This Branch has used every opportunity through the radio, press and public meetings to encourage the use of proper crops and cropping practices for sawfly control. Over 2,000 forecast maps with control recommendations were displayed at post offices and in other conspicuous places in infested areas to bring this problem to the attention of the farmers.

Rescue wheat is now readily available and in Crop Districts 1, 3 and 4 sawfly infestations have been materially reduced by the introduction of this variety.

The table below shows a comparison of the estimated crop losses due to sawfly in the last four years:

		LOSS IN BUSHELS			
Crop District	1946	1947	1948	1949	
1	1,050,000	1,289,000	1,021,000	404,000	
2	144,500	143,880	39,700	29,000	
3	180,000	197,500	205,500	197,000	
4	1,680,000	1,586,250	1,018,500	879,000	
5	10,000	56,400	113,200	82,000	
6	100,000	150,000	197,700	162,000	
7	5,000	Negligible	Negligible	Negligible	

CUTWORMS

Pale Western Cutworm damage was not widespread nor was the damage serious. Some crop losses occurred in the Drumheller area but only one field was observed where reseeding may have been required. West of the line between Coutts-Taber-Calgary-Red Deer no damage was reported. The forecast of this probability was expected as this area had sufficient rainfall in 1948 to prevent any outbreak.

A copy of the 1950 cutworm forecast prepared by the staff of Field Crops Insect Laboratory at Lethbridge was mimeographed and made available to every District Agriculturist, Municipal Field Supervisor and the farm press. Control measures were also recommended so that farmers in infested areas could take preventive steps to avoid crop damage on their fields.

No damage by the Army cutworm was noted or reported this year. The insect was located on summerfallow in the Parkland district.

The red-backed cutworm did slight damage to brome grass seedlings in fields between Red Deer and Carstairs.

WIREWORMS

Wireworms were prevalent and active in most of the agricultural areas in Alberta. Thinning was generally light in southern Alberta except at isolated points near Magrath and Coaldale where spring wheat was thinned up to 30%. Claresholm, Vulcan and Champion districts also reported some loss. From Calgary north moderate crop losses were reported but at Camrose some fields were so seriously injured that reseeded was necessary. Damage was also severe in some fields from Edmonton east to Chauvin.

Wireworm damage in Peace River district was greater than in any other area in Alberta. In the Beaverlodge-Grande Prairie-Rycroft area many fields were almost totally lost requiring reseeding. Wheat was most severely damaged.

A portion of the potato crop, particularly in the commercial production areas is reduced in grade and quality because of wireworm damage. Some growers in the irrigated areas reported 20-25% loss in marketable potatoes. The use of some soil chemicals and fumigants such as ethylene dibromide and chlorinated hydrocarbons (Chlordane, Benzene hexachloride) offer some hope to the grower.

A product commercially known as Benesan (consisting of BHC 20% gamma isomer plus mercury as a fungicide) applied on seed at a rate of 1 oz. per acre (recommended rate) reduced damage from 50% to 10% in experimental tests at Beaverlodge. In two of our own trials at Claresholm and Camrose where this material was used there was a significant increase in yield in wheat over checks. At recommended rates one application of BHC will cost the farmer about \$2.50 to \$3.00 per acre. This cost should be borne over a period of about two or three years as one proper application of this material should reduce wireworm populations to non-economic importance for that period. It should be borne in mind however, that because BHC is effective only against the wireworms in the top soil and since their life cycle is long, all wireworms cannot be eliminated with one treatment.

Three trials were conducted to test chlordane dusts and sprays as soil insecticides. Encouraging results were obtained when at least 5 lb. active ingredient was used per acre. Until proper equipment can be made available for application of this material, the use of chlordane for wireworm in this province is expected to be limited.

SWEET CLOVER WEEVIL

This insect was found in Alberta for the first time in 1941. No economic crop losses occurred until 1949, when in the Mac-

leod-Granum-Claresholm-Stavelly area a very severe infestation appeared, denuding most of the sweet clover fields.

Following this outbreak, a survey was conducted in the province to check on the extent of infestation. Of the 118,640 acres of sweet clover examined, weevil was found on 13,475 acres—7,540 acres light infestation while 5,935 acres were infested from moderate to severe. The survey revealed that this pest is now prevalent all over Alberta with heavier infestations in the south.

In order to find ways and means to cope with the emergency this Branch conducted two trials using chlordane and DDT. One and one-half pounds of technical chlordane mixed in 5 gallons of water (sufficient to cover one acre) when sprayed with a regular weed sprayer gave practically complete control of this pest. Twelve days after treatment there were 25 dead weevils to every 1 living. In most cases the living ones were affected. Dusting with 3% DDT also gave good results in checking the migration of weevils.

OTHER CROP PESTS

English Grain Aphis which destroyed a large acreage of cover crop in the Claresholm-Granum-Parkland district in 1948 caused no damage in 1949.

Colorado Potato Beetle infestations were reduced significantly as compared with 1947 and 1948.

Many growers are now properly equipped, to spray or dust for beetle control. A leaflet containing control recommendations for use of DDT was mailed to most of the commercial potato growers in the province.

Two field trials where chlordane sprays were tested at a rate of $\frac{3}{4}$ lb. active ingredient per acre gave nearly a 100% control of Colorado Potato Beetle. At this rate the cost of insecticide per acre was 72c.

Pear Slug on Cotoneaster and **Grape Leafhopper** on Virginia Creeper were found at Coaldale; good control was obtained by using DDT.

Say's Grain Bug, although quite common on a few wheat fields at Winnifred and Whitla this year, has not yet been of economic importance for the last 5 years.

Onion Maggots have caused much concern to onion growers in the Edmonton district. Where recommended control measures were taken, results were quite satisfactory.

In 1948 **Pea Aphis** appeared to be on the increase. It was expected that treatment of crops would be necessary in 1949. This did not materialize; infestations were far below those of last year and practically no dusting was necessary.

The Red Spider or Mite appeared again on many raspberry plots in the Edmonton and Calgary area. In addition to trials with a product containing hexaethyltetraphosphate (HETP), Parathion was tried this year and found to have greater residual effect to anything tried so far. Parathion is very poisonous to

man, but if proper precautions are observed this product can be safely used as a very effective miticide.

The **Sugar Beet Root Louse** outbreak in Southern Alberta was the most severe in the history of the sugar beet industry. The fields that suffered most were those that were seeded late and affected by the early frost.

CROP DISEASES

LEGUMES

Bacterial wilt of alfalfa was severe in the southern part of the province. Most of the irrigated fields over three years of age were affected. Ladak variety has been recommended in these areas because it is hardier than Ranger and more resistant than Grimm. The table below based on survey made by the Dominion Laboratory of Plant Pathology indicates the extent of infestation in different areas:

District	Fields Examined	Infection	Fields Infected
Peace River	80	trace to slight	5.0 %
Central Alberta	77	trace to slight	9.1 %
Southern Alberta	87	trace to slight	73.3 %

Winter Crown rot of Alfalfa also causes winter killing to older stands. The table below (survey also conducted by Plant Pathology Laboratory) indicates the degree of infection in 3 Alberta regions:

District	Fields Examined	Infection	Fields Infected
Peace River	80	trace to moderate	37.5 %
Central Alberta	77	trace to moderate	79.2 %
Southern Alberta	87	trace to severe	89.6 %

BACTERIAL RING ROT OF POTATOES

There were 1,052 Commercial fields inspected in control areas around Edmonton, Drumheller, Calgary, Brooks, Medicine Hat and Lethbridge. This is 342 fewer farms, but 315 more acres than were inspected in 1948.

A summary of inspection results since 1940 is presented in the following table.

RESULTS OF ANNUAL RING ROT SURVEY—1940-1949 INCLUSIVE

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
No. farms inspected	261	430	406	965	1010	1198	1037	1127	1394	1052
No. farms diseased	73	102	151	235	241	137	103	76	93	118
Change in No. diseased farms from previous year	+33	+29	+49	+84	+6	-104	-34	-27	+17	+25
Percentage of inspected farms found diseased..	28.0	24.7	37.3	24.1	24.8	11.4	6.3	6.7	6.7	11.2

It will be noted that in the overall picture the incidence of bacterial ring rot was significantly increased this year. The percentage of inspected farms found diseased increased from 6.7% in 1948 to 11.2% in 1949.

The following table shows the farms and acreage of potatoes inspected in various districts and the acreage infected with ring rot:

RESULTS OF 1949 RING ROT SURVEY BY COMMERCIAL AREAS

	No. Farms Inspected	No. Farms Diseased	Acreage Inspected	Acreage Diseased	% Diseased of Total Average
Lethbridge	513	78	4327	747	17.2
Calgary	164	8	320	18	5.6
Brooks	155	12	1855	262	14.1
Edmonton	220	20	2152	151	7.0
Total	1052	118	8654	1178	

In the Lethbridge district over 17% of the total crop acreage inspected was infected with ring rot. This is about twice the acreage of last year. Brooks district was particularly bad this year—the percentage of infected acreage being 14% as compared to 3% in 1948. In the Edmonton district the situation remained unchanged. It is encouraging to note that in the Calgary area proper, not one field was found infected with ring rot; all diseased fields were in the Drumheller and Strathmore districts, such areas being recorded under “Calgary” in the survey. It is felt that the establishment of a number of “Approved Seed Houses” in Calgary where certified potatoes were handled attributed much to keeping Calgary practically free of bacterial ring rot.

It will be noted from the above tables that the incidence of bacterial ring rot had been reduced to a 6% level over the past 8 years. This year however, it has again increased to 11%. It is difficult to know the reason for this increase, as there was no slackening in the measures taken under the regulations respecting ring rot; as a matter of fact greater care was exercised regarding disposition of infected potatoes than in the previous year. We have evidence however, that one lot of certified seed potatoes imported for seed purposes was infected with bacterial ring rot. Another reason for the increase particularly in the Lethbridge district may be due to the indiscriminate purchase of potatoes for seed by the very many new growers in the area this year. New growers who claim to be unaware of restrictions regarding the planting of potatoes appear to be the greatest problem combating bacterial ring rot. Some pathologists also believe that the growing season was in favor of disease development and therefore bacterial ring rot was readily detected in the field.

Regulations with respect to the disposition of imported potatoes infected with ring rot are now being drafted. Contamination from this source can thus be more effectively prevented. A recent survey has indicated that about 80% of the infected potatoes have now been moved into channels where they will not be used for seed. This is very encouraging. The Department is planning to make disease-free seed available at cost to those who had ring rot in their crop. This should prevent the purchase of seed of unknown origin which may be infected.

LIVESTOCK PESTS

CATTLE GRUBS (WARBLE FLIES)

In 1948 Municipal Districts of Bow Valley (Strathmore) and Conrich (Calgary) indicated their desire in establishing

warble-fly-free areas. In 1949, Mountain View (Didsbury) Municipality undertook a similar program. Municipalities with Service Boards were advised and encouraged to conduct organized control measures.

Campaigns conducted by Service Boards in the M.D.'s of Wainwright and Turner Valley are receiving enthusiastic support from the ratepayers. In Turner Valley alone about 35,000 head of cattle were treated.

In Wainwright M.D. the following charges were made for spraying:

100 head of cattle or over	10¢ per head
50 to 100 head of cattle	12¢ per head
Under 50 head of cattle	15¢ per head

The scale of charges encouraged farmers to herd their cattle together and take advantage of reduced prices. These prices were calculated to cover depreciation on equipment and all expenses of operating the project.

It is estimated that about 400,000 head of cattle were treated in Alberta—approximately a quarter of Alberta's cattle population. The reduction in numbers treated over last year may be due to the fact that many herds treated for a number of years are now free of warbles. It is encouraging to observe such results—it demonstrates the effectiveness of campaigns, but the discontinuation of spraying entirely in a community is not desirable because reinfestation is quite possible.

SHEEP KEDS

It is estimated that about 32,000 sheep were treated for ked control in 1949, mainly in the Lethbridge-Cardston district. Vat dips, as well as sprays were both used and both were effective.

RODENTS

The Columbia ground squirrel appeared again in the foothills of southern Alberta this year to be a pest of economic importance on some farms. The population of this pest however, has decreased over the last few years.

Pocket gophers are increasing in numbers in every part of the black soil zone. All latest information available on control of this pest was provided to many farmers of the province.

A number of trials were conducted to test the effectiveness in bait of a compound known as Antu to replace strychnine. Antu is much safer to humans than strychnine. Trials were set out at Willingdon and at Namao. The results of these tests were very difficult to assess, but it did appear that Antu was not as effective as strychnine in reducing the number of pocket gophers in any area.

POTATO IMPROVEMENT AND PROTECTION

POTATO PRODUCTION

It is estimated that over 26,000 acres of potatoes were grown in 1949. Commercial and seed potato crops have been profitable

during the last few years; consequently a greater acreage can be expected. The development of irrigation projects in Southern Alberta will also tend to increase this acreage. Modern potato machinery is being used on many farms in producing areas.

Estimated potato production in Commercial potato areas in 1949 was as follows:

Lethbridge	30,000 tons
Brooks	6,500 tons
Calgary	400 tons
Edmonton	4,000 tons

Due to dry weather conditions, Calgary and Edmonton experienced one of the poorest potato crops in years. This resulted in almost immediate shipment of potatoes into these two cities immediately after digging. From October to December, 1949, over 70 carloads of potatoes arrived in Edmonton from Brooks and Lethbridge as well as from Manitoba, British Columbia and Prince Edward Island. Importations to Alberta are expected to continue until a new crop is produced.

The seed potato industry expanded somewhat in 1949. There were 1,005 acres entered for certification as compared with 781 acres in 1948. There were also 99 seed growers as compared with 95 in 1948. Of the 182 fields entered for inspection, all but 34 fields that were inspected received certification. Certified grades of Alberta seed potatoes were very much in demand from other provinces as well as from the United States—the demand far exceeded the supply.

The Field Crops Branch purchased 260,000 pounds of seed potatoes for use in the ring rot control program. It also arranged the purchase of good quality seed potatoes by many farmers in one district from farmers in other districts. A record of all inspected fields is available at the Branch and is used for making selections and directing farmers to sources of good seed.

The Potato Production Improvement Committee, a sub-committee of Alberta Horticultural Advisory Board met from time to time during the year to study and make available to growers, the latest information relative to potato production. A bulletin on this subject has been prepared and is in print at present.

POTATO INSPECTION

As in the last few years, six inspectors were employed to administer The Vegetable Sales (Alberta) Act and the regulations thereunder, with a view to improving the grade of potatoes offered for sale. Twelve detention notices were issued; growers complied with the regulation by regrading their potatoes to meet grade standards.

Regulations under The Vegetable Sales Act have been revised to include onions, turnips, rutabagas, beets, carrots, parsnips and cabbage. Educational work through meetings and the press was carried on to acquaint the growers with grade standards.

INDEX FOUNDATION SEED POTATOES

The Field Crops Branch in co-operation with the University of Alberta and the Dominion Seed Potato Certification Service indexed tubers again this year, grown by selected Foundation seed potato growers. The table below shows the extent of this program and the results obtained:

Variety	District	Number Tested	Number Qualified	Percent Qualified
Netted Gem	Flatbush	39	24	61
Netted Gem	Lacombe	120	81	67
Netted Gem	Peers	99	82	83
White Rose	Peers	84	67	79
Netted Gem	Macleod Valley	114	101	89
Irish Cobbblers	Namoo	44	40	91
Early Ohios	Namoo	64	51	80
Netted Gem	Brooks	105	72	69
Total.....		669	428	

There were 669 tubers planted in the greenhouse, of which 453 or 67.8% qualified to go out as tuber-indexed seed.

Pure seed stocks of varieties listed above are maintained by this program. Growers producing foundation stock from indexed tubers are paid \$1.00 per cwt. as a bonus, provided their seed is made available to the Department for multiplication by experienced or interested growers.

OCEANSIDE SEED POTATO TESTS

Again this year an agreement was entered into between the Alberta Department of Agriculture and the California Department of Agriculture, whereby one acre of land at Oceanside, California, was rented for \$150.00. This land was used to test seed potatoes during fall and winter months to further check on the freedom of tubers from disease. Many buyers in the U.S. purchase seed potatoes on the basis of Oceanside Test.

Alberta samples submitted in 1948, were read in early 1949, and were found to be practically free of any disease. Out of the 26 samples submitted only one leaf roll was found in each of 3 samples.

This year 29 samples were again submitted to Oceanside. The grower was charged a fee of \$5.00 partly to defray land rental charges; the Department assumed all transportation charges and all other costs relative to this shipment.

OTHER PROJECTS

Housefly Control

Housefly control demonstrations conducted by this Branch were very effective in showing what DDT can do to rid a farmstead of flies. Six such demonstrations were held, three at Edmonton, one at St. Albert and two at Lethbridge. In the Edmonton district DDT wettable powder was used and the insecticide applied by a Hardie sprayer. In Lethbridge, a new compound known as 497 was used with excellent results.

In no instances did flies show any resistance to DDT if this material was applied properly and in correct concentrations.

A number of farmers have expressed desire to participate in a fly control program on a community basis. It is planned to organize such campaigns through District Agriculturists and Agricultural Service Boards.

Seed Treatment

Four trials at Edmonton, Camrose, Lamont and Leduc were set up to demonstrate the effectiveness of various fungicides in treating grain. Due to very dry weather conditions one plot was abandoned. In general, results based on germination were very much in favor of mercury treatments over formaldehyde, particularly for wheat.

A survey was conducted to check on various types of grain treatments by the farmers. This work was done in conjunction with the seed drill survey and further reference is made to it elsewhere in this report. (See report on this subject under Crop Improvement.)

Miscellaneous

Twenty-five timely Crop Protection Bulletins were issued and announced over the radio. In addition emergency flashes particularly on grasshoppers were well carried from time to time.

Crop Protection displays were used in connection with Short Courses at Calgary, Lethbridge and Edmonton.

There were 385 insect and disease specimens submitted for identification.

Acknowledgment

Grateful acknowledgment is made to pathologists and entomologists of the University of Alberta and the Dominion Department of Agriculture for their assistance and information in planning and conducting programs for the control of plant diseases and insect pests in Alberta.

REPORT OF THE LIVESTOCK BRANCH

W. H. T. Mead, Live Stock Commissioner.

I. A. Coles, Live Stock Supervisor.

A. J. Charnetski, Live Stock Supervisor.

CATTLE

Except for areas in the Peace River District and southern Alberta, extreme drought during spring and early summer caused a loss in condition of cattle which had come through the winter in good condition. Considerable additional feeding was required during this period due to slow pasture growth. July rains resulted in great improvement in pastures and fodder crops. Early fall frosts resulted in poor quality feed grains. In spite of unfavorable pasture growth during spring and early summer, cattle came through in fair to good condition.

Fodder supplies are adequate to carry cattle through a normal winter, but a shortage of feed grain is indicated in many districts.

Market prices for commercial cattle remain at a good level and the demand for good purebred breeding stock continues strong.

The Canadian Freight Association (Western Lines) Tariff No. 183-C and the tariff of individual carriers which made special provision for reduced rates and regulations with respect to the movement of Pedigreed Live Stock for Breeding Purposes between points in Canada was cancelled on May 31st, thereafter allowing rates and regulations as apply on the movement of ordinary live stock.

The cancellation of the above tariff has increased the cost of shipping individual purebred cattle by four times the original cost in most age groups.

At the fifth annual sale of Shorthorn bulls held on May 10th by Claude Gallinger, 33 bulls sold for an average of \$1,670.00. The top bull sold for \$4,700.00 to Herman Alber & Son, Dixon, Illinois.

A total of 1,002 bulls were sold at the 49th Annual Calgary Bull Sale for an average price of \$638.99, which is the highest average obtained since the Calgary Bull Sale was inaugurated in 1901.

Wm. Weber, Woodhouse, Alberta, paid \$7,000.00 for the Hereford bull "Proud Mixer K H F 103rd"—228602—bred by Albert Alm & Sons, Claresholm.

J. Alex Rankin, Twin Butte, Alberta, paid \$2,000.00 for the Shorthorn bull "Melbar Norseman Remembrance"—300761—bred by Wm. Melnyk, Chipman.

W. J. Hunter, Calgary, paid \$3,650.00 for the Aberdeen-Angus bull "Woodlawn Eileenmere 8th"—91164—bred by Roy Ballhorn, Wetaskiwin.

At the Edmonton Spring Show and Sale of finished cattle held on March 23rd, the grand champion steer was shown by Lloyd Wilson, Edmonton, and was purchased by the T. Eaton Company (Western) Limited for .50c per pound. The reserve

champion steer was shown by Lawrence Kallal, Tofield, and was purchased by the T. Eaton Company (Western) Limited for .42c per pound. Following is a summary of the average prices at the Sale:

37 singles exhibited by Juniors averaged	\$26.08 per cwt.
45 singles (open classes) averaged	24.84 per cwt.
27 groups of five averaged	23.20 per cwt.
6 carlots averaged	23.36 per cwt.

June survey of the number of cattle on Alberta farms for the past five years is as follows:

Year	No. of Head
1945	1,860,200
1946	1,768,100
1947	1,654,000
1948	1,584,300
1949	1,465,000

The decrease in numbers from 1948 is 119,300 head or 7.53%.

The official reports of the Dominion Department of Agriculture show for Alberta the following cattle and calf marketings and total value for 1945 to 1949 (inclusive):

Year	No. Cattle	Value	No. Calves	Value
1945	534,815	\$46,197,320.00	118,923	\$3,197,839.00
1946	494,137	47,664,500.00	100,513	2,880,700.00
1947	423,154	46,123,786.00	87,185	2,571,085.00
1948	531,983	75,341,245.33	118,240	5,063,643.71
1949	526,958	80,624,000.00	126,089	6,304,000.00

The above figures show a comparison of cattle production and the annual revenue derived.

CATTLE AND CALF SHIPMENTS OUT OF THE PROVINCE

	1945	1946	1947	1948	1949
British Columbia	82,308	91,717	102,924	103,193	102,883
Saskatchewan	13,310	23,068	12,734	12,248	6,633
Manitoba	41,693	37,796	27,197	33,186	30,188
Ontario	18,411	16,330	18,508	42,940	49,706
Quebec	33,802	31,207	34,627	37,522	36,759
Nova Scotia	366	33	375	34	-
New Brunswick	151	279	-	-	-
U. S. A.	400	7	150	72,402	80,342
Newfoundland	-	-	-	42	71
Prince Edward Island	-	-	56	5	-
	190,441	200,437	196,571	301,572	306,582

AUCTION SALES OF PURE-BRED CATTLE

CALGARY BULL SALE:

Breed	1947		1948		1949	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	157	\$340.35	171	\$372.78	172	\$529.00
Angus	94	371.81	109	395.41	145	510.17
Hereford	599	530.97	599	512.61	685	693.66
TOTAL ALL BREEDS	850	\$178.15	879	\$470.87	1002	\$638.99

EDMONTON BULL SALE:

Breed	1947		1948		1949	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	144	\$253.30	69	\$321.59	94	\$435.10
Angus	20	221.00	6	395.00	12	346.66
Hereford	70	343.93	55	340.82	62	541.93
TOTAL ALL BREEDS	234	\$265.34	130	\$333.11	168	\$468.21

LACOMBE BULL SALE:

Breed	1947		1948		1949	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	85	\$231.00	99	\$249.00	90	\$377.00
Angus	26	372.00	52	273.00	62	448.34
Hereford	61	388.00	120	312.00	125	494.32
TOTAL ALL BREEDS	182	\$311.51	271	\$281.46	277	\$446.01

LLOYDMINSTER BULL SALE:

	1947		1948		1949	
Breed	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	53	\$227.54	58	\$203.53	35	\$349.70
Angus	1	280.00			1	290.00
Hereford	53	351.32	64	365.59	59	517.29
TOTAL ALL BREEDS	107	\$289.34	122	\$288.54	95	\$453.15

CAMROSE BULL SALE:

	1947		1948		1949	
Breed	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	32	\$170.93	21	\$332.14	21	\$264.52
Angus	1	200.00			1	180.00
Hereford	32	199.06	13	389.23	31	338.70
TOTAL ALL BREEDS	65	\$185.22	34	\$353.97	53	\$306.32

THE CATTLE IMPROVEMENT POLICY (Pure-Bred Sires)

Under the Cattle Improvement Policy, pure-bred sires are placed with commercial breeders at reduced prices. Up to and including July 23rd, the Department of Agriculture contributed 25% of the cost of the sires with a maximum of one hundred dollars on each sire, in addition to the freight charges to the applicant's nearest railway station. After July 23rd, the contribution of the Department of Agriculture was reduced to 10% of the cost of the sires with a maximum of forty dollars on each sire, in addition to the freight charges to the applicant's nearest railway station. Each farmer, provided he is not a purebred breeder, is entitled to one purebred sire through this Policy.

The cancellation of the aforementioned railway tariff has made the Department's freight contribution an important factor under this Policy.

During the year 753 bulls were placed through this Policy.

THE LIVE STOCK LISTING BUREAU

Under this policy, purebred breeding stock, male and female, is placed with purebred breeders and others not entitled to come under the Cattle Improvement Policy. There is no financial assistance under this Policy. During the year 30 bulls and 13 females were placed through this Policy.

Bulls placed through the Cattle Improvement Policy and Live Stock Listing Bureau were purchased from over 350 purebred breeders in Alberta.

ARTIFICIAL INSEMINATION

As a result of further investigations made in 1948 of artificial breeding centres in Eastern Canada and the Eastern and Mid-Western U.S.A., the Department withdrew its policy on artificial insemination to grade herd owners through local breeding clubs.

The continued weakness of response to service supplied in the area adjacent to Olds failed to meet the demands of operating costs. The volume of cows serviced fell far short of the number required for sound operation. Breeding in this club was suspended on June 30th, 1949.

The following table shows the general trend in breeding work done in this club over the six year period:

	1944	1945	1946	1947	1948	1949 (6 mos.)
No. of Paid up Members	174	225	313	358	384	384
No. of Active Members	120	150	200	210	145	102
No. of Cows Bred	911	975	1212	1104	641	322
No. of Cows Bred per Active Herd	7.6	6.5	6.0	5.4	4.4	3.15
No. of Cows Bred per Paid up Members	5.23	4.33	3.8	3.0	1.6	.84

During 1948 and the first six months of 1949, this club was breeding just about half the number of cows necessary properly to finance such a breeding program.

Service to Purebred Breeders

Service to purebred Holstein breeders was continued in 1949, largely from the bull "Sovereign Masterpiece." This bull's first calves were born in July, 1948, and have shown good promise. The bull "Glenafton Rag Apple Architect" was difficult to use artificially and consequently only 18 cows were bred to him. This bull was sold in December to a group of breeders at Camrose, to be used in natural service.

Despite some difficulties in providing suitable technicians in all areas where demand exists, and despite the impossibility of providing service in some areas, this service has continued to receive satisfactory support from the purebred breeders as is shown in the following table:

	1944	1945	1946	1947	1948	1949
No. of Herds Using Service	16	43	58	63	83	92
Total No. of Cows Bred	108	247	317	407	365	419

This service is showing good results, particularly in the smaller herds where the cost of a good herd bull is usually the limiting factor.

The young bull, "Glenafton Rag Apple Banner," purchased in April and put into service in September, has not proven satisfactory as a breeder. This unfortunate circumstance will necessitate his replacement in order to continue a satisfactory follow-up on the daughters of "Sovereign Masterpiece."

Following sale of the bulls that were used exclusively in the Olds Club, grade herd owners in the area of the club have been provided with service to grade cows subject to the availability of surplus semen from the purebred breeding program and subject to the technician on duty at the laboratory having time to service calls to grade cows. Through the last six months of 1949 64 grade cows were bred for 24 different owners.

On June 1st, 1949, W. H. T. Mead was transferred from the Artificial Breeding Station at Olds to the head office of the Live Stock Branch and R. J. McKnight assumed the supervision of operations at the Breeding Laboratory.

As suggested in previous reports, it is very doubtful if cow numbers are available to insure satisfactory operation of grade herd breeding clubs under conditions existing in the Prairie Provinces.

DAIRY HEIFER CALF CLUB POLICY

During the year, this Branch arranged for the pick-up of 218 dairy heifer calves direct from dairymen in the Edmonton milk shed and shipped them to the following Junior Dairy Calf Clubs:

Betchton	Falher	Smoky Lake
Bentley	High Prairie	Vilna
Darwell	Holden	Erskine
Donalda	Lake View	Sangudo
Donnelly	Sedgewick	

The demand for dairy heifers continues to be greater than the supply. This necessitates some clubs waiting for calves until they become available.

Orders for approximately one hundred calves were on hand at the end of the year, that can only be filled as calves are procured.

COMMUNITY AUCTION SALES

Selling of cattle off Alberta range land by means of auction sales, is proving more popular each year. The bulk of auction selling is done through the Community Auction Sales Limited, with headquarters at Pincher Creek. However, independent sales were held at Medicine Hat, Brooks, Czar, Cadogan and Lea Park. A total of 32,265 head of cattle were inspected through the various auction sales.

There is evidence of increased interest in selling more slaughter cattle by auction. Burns Ranches Limited and the Lethbridge Central Feeders' Association Limited held successful auction sales at Calgary and Lethbridge.

Accommodation for holding such sales is provided in the new Public Stockyards at Lethbridge.

SWINE

Swine production in Alberta declined again this year. Swine marketings were reduced by 20% when compared to 1948. Apparent reasons for this reduction were: lack of suitable home-grown feeds in areas favourable to swine production; labour shortage; and relatively high farm income from cash grains and other live stock.

Despite the 1949 British Bacon Agreement at \$36.00 per 100 pound Wiltshires at seaboard, which works out to a price of \$27.55 for Grade A hogs at Edmonton, hog prices fluctuated widely during the year. The high being at \$35.00 in the month of August, and the low at \$23.50 in December.

The Canadian bacon shipments to England fell short by approximately 54 million pounds. The contract called for 160 million pounds. Lack of suitable feed grains in Western Canada was largely responsible for this shortage. The new bacon agreement with Great Britain is for 60 million pounds of Wiltshires at \$29.00 seaboard basis. Bacon shipments to England will be subsidized at the rate of \$3.50 per cwt., thereby bringing the producers seaboard price to \$32.50 per cwt.

The quality of hogs is reflected by market grades. For the past three years Grade A's ranged between 22% and 23%. These low gradings are believed to be the result of marketing the hogs at extreme weights, and by the use of hog feeds lacking in the proper kind and proportion of proteins. If more hogs were sold at 190 to 200 pounds, the percentage of Grade A carcasses would be increased considerably.

In the years 1945 to 1949, inclusive, Alberta hogs graded as follows:

Table No. 1	1945 %	1946 %	1947 %	1948 %	1949 %
Grade A	27.22	23.70	21.96	23.21	22.13
Grade B	54.85	56.75	54.30	57.12	57.22
Grade C	7.11	7.56	7.12	6.84	6.86
Grade D	0.35	0.41	0.33	0.46	0.40
Light	0.70	0.69	0.92	1.03	0.95
Heavy	2.26	2.80	3.48	2.94	2.92
Ex. Heavy	1.48	1.97	3.53	2.47	2.69
Injured	0.05	0.05	0.06	0.06	1.05
Rgl.	0.55	0.57	0.54	0.56	0.56
Stags	0.35	0.39	0.45	0.42	0.78
Sows	5.10	5.10	7.31	4.89	

The demand for purebred breeding stock was fairly good during this year. Prices, however, were lower than last year. The average price for boars at the Calgary Fall Sale was \$78.63 as compared to \$126.29 in 1948. Sows averaged \$66.84 compared to \$108.94 last year. The Edmonton Fall Sale also experienced lower prices. Boars averaged \$64.37; sows \$67.56. In 1948 the average price was \$87.60 and \$79.69 respectively.

The following tables give comparative numbers and prices of swine sold through Edmonton and Calgary sales from 1947 to 1949, inclusive.

TABLE No. 3.

EDMONTON SPRING SWINE SALE: (No. sold and average price)

	No.	1947	No.	1948	No.	1949
Yorkshire Gilts	117	\$77.14	123	\$78.96	130	\$99.34
Tamworth Gilts					2	90.00
Yorkshire Boars			26	77.30	48	70.73
Tamworth Boars					3	80.00

TABLE No. 4.

EDMONTON FALL SWINE SALE (No. sold and average price)

	No.	1947	No.	1948	No.	1949
Yorkshire Sows	122	\$51.43	148	\$78.07	196	\$68.52
Tamworth Sows	2	40.00	7	101.78	21	58.58
Yorkshire Boars	102	50.88	150	87.71	161	63.32
Tamworth Boars	12	54.79	5	84.50	6	92.50
	238	\$51.27	310	\$83.63	384	\$66.02

TABLE No. 5.

CALGARY FALL SWINE SUMMARY:

Sows						
	No.	1947	No.	1948	No.	1949
York. Oct.-Apr.	91	\$55.03	66	\$107.92	118	\$66.85
York. Prev. Oct.	2	72.50	4	151.25	16	81.87
Tam. Oct.-Apr.	6	47.50	8	96.25	16	58.91
Berk. Fem.					3	68.33
Female Total	99	\$54.92	78	\$108.94	153	\$66.84
Boars						
York. Oct.-Apr.	71	\$57.36	75	\$133.43	66	\$77.08
York. Prev. Oct.	1	57.50	1	115.00		
Tam. Oct.-Apr.	10	80.25	10	97.00	24	84.06
Tam. Prev. Oct.			1	82.50	1	70.00
Berk. Boar			6	95.00	4	78.75
Boar Total	88	\$59.97	93	\$126.29	95	\$78.63
SWINE TOTAL	187	\$57.30	171	\$118.38	248	\$71.36

TABLE No. 6.

TOP PRICES FOR BOARS AND SOWS—FALL SALES

	1947	Calgary 1948	1949	1947	Edmonton 1948	1949
York. Boar	\$175.00	\$300.00	\$145.00	\$150.00	\$355.00	\$175.00
York. Sow	155.00	180.00	155.00	180.00	180.00	235.00
Tam. Boar	140.00	200.00	200.00	85.00	110.00	175.00
Tam. Sow	65.00	120.00	80.00	40.00	115.00	90.00
Berkshire Boar		125.00	82.50	.....	.....	.....
Berkshire Sow .....		.....	75.00	.....	.....	.....

SWINE IMPROVEMENT POLICY

The Department continues to operate the Swine Improvement Policy. This Policy provides for placement of Yorkshire and Tamworth boars at cost. Each eligible applicant may purchase a boar, every two years, and have express shipping charges prepaid to his nearest railway destination point. Those not qualifying under this Policy, and those requiring female breeding stock, come under the Live Stock Listing Bureau, which does not provide for the prepayment of shipping charges. Breeding stock for both policies are purchased from top quality Alberta swine herds.

The placement of swine under these policies, from 1941 to 1949, inclusive, were as follows:

TABLE No. 7.

Year	Live Stock Gilts	Listing Bureau Boars	Improve- ment Policy Boars	Total Boars
1941 .....	....	....	207	207
1942	24	10	251	261
1943	31	50	362	412
1944	9	15	180	195
1945	26	15	187	202
1946	36	17	200	217
1947	50	5	190	195
1948	22	14	120	134
1949	19	20	145	165

The above list included the placement of twenty-three Tamworth boars, which are being used mostly for cross-breeding purposes.

Considerable time was required of this office during the year in dealing with various matters pertaining to swine production. These include feeding problems, housing, swine management, judging at the Fairs and fulfilling requests from a number of purebred breeders to assist them with the culling of their swine herds. Lectures on live stock were given at twenty-six meetings. Average attendance was fifty-five persons per meeting.

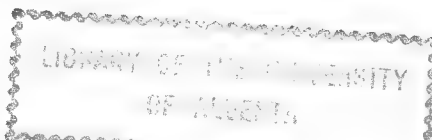
DOMINION-PROVINCIAL BROOD SOW POLICY

This policy is operated jointly by the Dominion and Provincial Departments of Agriculture. The Provincial Department contributes to the policy in prepayment of one-half of the freight shipping charges. Under the policy in question, any group of five or more farmers may obtain at cost a minimum of 20 grade bacon-type gilts, and have freight shipping charges prepaid to their nearest destination point. In addition, each group may obtain from the Dominion Department a purebred boar on a loan basis. There were only 25 gilts placed under this policy in 1949.

SHEEP

Sheep depopulation in Alberta has retarded and seems to have reached the bottom. During the past few months, there were some indications of renewed interest in sheep production, particularly so in the less productive grey-wooded soil areas. Despite coyotes and other predators, farmers in the Darwell district (West of Edmonton) are carrying on with sheep production. They find it more profitable than other farm live stock and their losses from predators are relatively light.

The continued high prices for market lambs made sheep production more attractive. Good handyweight lambs ranged from \$19.00 to \$26.00 per cwt. Grade breeding ewes are selling up to \$18.00 per head. Due to heavy disbandment of range flocks in Southern Alberta, in the past three years, breeding ewes from these areas are not available for the establishing of new flocks. It is estimated that there are 110,000 head of sheep and lambs in feed lots in Alberta this year. Because of shortage of feeder lambs in Alberta, a large number of these had to be brought in from Saskatchewan. Feeder lambs sold at \$19.50 per cwt.



The following table, based on the June survey, indicates sheep population in Alberta during the years 1940 to 1949, inclusive:

TABLE No. 1—June

1940	882,600	1945	974,900
1941	702,451	1946	666,800
1942	828,000	1947	613,800
1943	900,000	1948	448,600
1944	1,023,000	1949	441,800

This is the second year in which commercial sheep and mutton exports to the United States markets were permitted. No doubt this has some bearing on the rise in price of market lambs and sheep in Canada. Complete statistics on the export of live stock and live-stock products is available only on a Canadian basis.

The figures hereunder are given for mutton and lamb and sheep and lambs, to indicate export trends and values with respect to the sheep industry alone.

Table No. 2

CANADIAN EXPORT OF MUTTON AND LAMB:

	To Great Britain		To United States		Total Export*	
	Lbs.	Value	Lbs.	Value	Lbs.	Value
1947	3,608,800	\$687,540	200	\$ 50	4,568,700	\$ 977,763
1948	1,569,000	269,703	2,784,500	1,125,181	5,056,100	1,645,934
1949			3,601,100	1,551,822	3,955,900	1,709,199

*—includes exports to other countries.

CANADIAN EXPORT OF SHEEP AND LAMBS:

	To Great Britain		To United States		Total Export*	
	No.	Value	No.	Value	No.	Value
1947			5,666	\$ 108,752	6,048	\$ 186,933
1948			51,407	805,434	51,909	815,407
1949			40,863	890,715	41,410	897,800

*—includes exports to other countries.

The export of purebred sheep from Alberta to the United States continued satisfactorily. P. J. Rock and Son of Drumheller are the main Western Canadian exporters. In this respect their contribution to the purebred sheep industry of this Province is very positive. Many United States buyers personally attended the Calgary Fall Sheep Sale, and helped materially in making that Sale a more profitable one.

As in previous years consignments of purebred sheep to the United States Sheep Sales were made by P. J. Rock and A. C. B. Grenville and the Clarindale Stock Farms, managed by A. Hildenbrand. It is unfortunate for the purebred sheepmen of this Province, that Mr. Hildenbrand has decided to return to his native State of Washington for permanent residence. He has made an excellent contribution to the sheep industry of this Province.

Alberta sheep marketings including the export of commercial sheep to the United States, are given in the following table:

Table No. 3
ALBERTA SHEEP MARKETINGS AND CLASSIFICATIONS

		LAMBS				SHEEP				Grand Total Sheep and Lambs		
		Good Handy Weight	Good Heavy	Common All Weight	Bucks	Total	Good Handy Weight	Good Heavy	Common	Unclassified	Direct Export	Total
1941—	Number	151,953	4,500	29,679	1,367	187,500	3,339	14,554	4,575	3,061	804	213,833
	%	81.1	2.4	15.8	.7		12.7	55.3	17.4	11.6	3.0	
1942—	Number	159,838	5,680	24,395	1,369	191,282	1,987	5,763	3,217	3,232	1,563	207,035
	%	83.6	2.9	12.8	.7		12.6	36.5	20.5	20.5	9.9	
1943—	Number	154,088	6,505	22,038	1,536	184,162	3,622	15,273	4,832	2,123	642	210,654
	%	83.7	3.5	12.0	1.8		13.7	57.5	18.4	8.0	2.4	
1944—	Number	193,452	6,495	45,232	1,543	246,722	12,737	7,212	6,780	4,527	25,146	303,124
	%	78.5	2.6	18.3	.6		22.6	12.8	12.0	8.0	44.6	
1945—	Number	188,162	3,651	39,076	2,380	233,269	10,466	15,132	10,029	3,496	56,562	328,954
	%	80.6	1.6	16.8	1.0		10.9	15.8	10.5	3.7	59.1	
1946—	Number	209,420	10,500	25,255	2,777	247,952	19,477	18,392	9,432	2,836	1,475	299,564
	%	84.5	4.2	10.2	1.1		37.7	35.6	18.3	5.5	2.9	
1947—	Number	191,064	6,164	24,706	2,535	224,469	23,780	22,571	9,540	7,152	1,671	289,183
	%	85.1	2.7	11.0	1.1		36.7	34.8	14.7	11.0	2.5	
1948—	Number	129,028	2,608	4,753	2,314	138,735	18,036	16,140	7,487	4,987	23,347	215,732
	%	93.0	1.9	3.4	1.7		25.7	23.1	10.7	7.1	33.4	
1949—	Number	101,869*	.....	7,501	2,802	111,772	15,134	.....	5,143	.....	28,032	160,081
	%	91.1	.....	6.9	2.0		31.3	.....	10.6	.....	....58.1	

* All Weights

The export of purebred sheep to the United States for the years from 1945 to 1949, inclusive, were as follows:

Table No. 4

Year	No. of Head
1945	1,061
1946	1,124
1947	1,938
1948	1,453
1948	998

The Calgary Stud Ram Sale held during the Stampede week, drew buyers from many parts of Western United States and Western Canada. Although bidding indicated keen competition, the quality of the individual animals did not in some cases measure up to flock stud standards.

The following table covers this Sale for the years 1946 to 1949, inclusive:

CALGARY SUMMER SALE OF STUD RAMS AND EWES:

Year Sold	Year of Birth	Breed	Rams			Ewes		
			No.	Av. Price	Top Price	No.	Av. Price	Top Price
	1945	Suffolk	9	\$87.25	\$170.00	16	\$56.25	\$95.00
	1946	Suffolk	7	99.36	125.00	7	50.00	77.50
1946	1945	Hampshire	7	57.85	120.00	4	46.25	80.00
	1946	Hampshire	3	58.33	100.00	2	35.00	45.00
	1946	Suffolk	9	111.50	325.00	9	62.50	130.00
	1947	Suffolk	12	79.88	260.00	5	50.50	60.00
1947	1946	Hampshire	5	114.50	330.00	4	36.88	42.50
	1947	Hampshire	3	70.83	100.00	....	..	....
	1947	Suffolk	8	138.33	400.00	11	128.90	400.00
	1948	Suffolk	9	166.66	470.00	7	71.43	125.00
1948	1947	Hampshire	1	60.00	.....	2	42.50	50.00
	1948	Hampshire	3	75.83	105.00	..	....	...
	1948	Suffolk	8	129.08	250.00	8	117.20	210.00
	1949	Suffolk	9	137.50	345.00	9	83.61	200.00
1949	1948	Hampshire	1	700.00	700.00	3	40.83	50.00
	1949	Hampshire	....	.....	.....	1	32.50	32.50

The Calgary and Edmonton Fall Sheep Sales were well patronized by Alberta sheepmen. Buyers were also present from Saskatchewan and British Columbia. As in the past several years, American buyers were again strongly represented at the Calgary sale. They contributed greatly to the success of this sale. Their bidding was well balanced, sharp and decisive. While the Americans purchased a large number of lower priced rams suitable for range flocks; they also purchased some of the highest priced black-faced stud rams and ewes.

The following are the tabulated results of the Calgary and Edmonton Sheep Sales for the years 1947 to 1949, inclusive:

THE CALGARY FALL SALE:

Breed	1947		1948		1949	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Hampshire Ewes (1 yr.).....	62	\$21.89	46	\$22.61	46	\$33.38
Hampshire Ewes (L)	13	24.62	26	28.98	20	36.95
Suffolk Ewes (1 yr.).....	50	48.30	99	55.16	111	29.29
Suffolk Ewes (L)	52	45.38	53	43.41	55	37.06
Southdown Ewes (1 yr.)....	3	36.67	2	33.75	7	31.64
Southdown Ewes (L)	5	35.30	1	30.00	3	36.33
Cheviot Ewes			6	21.83	....	.....
Rambouillet Ewes					6	19.00
TOTAL	185	\$31.02	233	\$42.00	248	\$32.29

Breed	1947		1948		1949	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Hampshire Rams (1 yr.)....	59	\$48.92	40	\$37.88	30	\$50.15
Hampshire Rams (L)	56	38.86	61	41.02	57	48.21
Suffolk Rams (1 yr.)	17	79.41	30	71.00	36	51.17
Suffolk Rams (L)	119	62.11	110	74.30	133	50.61
Corriedale Rams	5	37.20			9	63.06
Rambouillet Rams	4	21.25				
Cheviot Rams	6	29.67	6	37.17	8	43.56
Southdown Rams (1 yr.)....	9	21.94	10	52.50	4	33.75
Southdown Rams (L)	4	20.75	4	28.75	7	24.57
TOTAL	279	\$52.09	261	\$61.24	284	\$49.48
Grade Ewes	63	\$12.19	62	\$16.52	532	\$41.46

THE EDMONTON FALL SALE:

Breed	1947		1948		1949	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Suffolk Ewes	15	\$38.66	70	\$31.71	49	\$27.58
Oxford Ewes	5	16.00	12	18.33	1	27.50
Shropshire Ewes	6	15.00			96	38.77
Southdown Ewes			5	18.50	8	38.75
Hampshire Ewes	34	24.41	16	20.47	....	.....
TOTAL	60	\$26.33	103	\$27.77	154	\$35.13

Breed	1947		1948		1949	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Cheviot Rams	41	\$30.00	63	\$38.84	7	\$33.93
Suffolk Rams	8	29.44	5	27.50	112	41.96
Oxford Rams	1	22.50			6	24.17
Shropshire Rams	2	30.00	2	26.25	1	25.00
Southdown Rams	42	33.63	24	33.54	16	37.50
TOTAL	94	\$35.80	104	\$33.10	296	\$37.56
Grade Ewes	14	\$10.07	23	\$14.47	....	.....

The importance of the sheep industry in Alberta, from the standpoint of added farm income, the utilization of low-grade pasture lands and grazing on weedy farm lands, is indicated by the following table:

ALBERTA COMMERCIAL SHEEP MARKETING AND VALUES:

Year	Stock Yards	Plants	Direct		Value
			Export (x)	Total	
1937	62,324	157,189	46	219,559	\$1,185,619.00
1938	48,451	151,029	125	199,605	1,097,828.00
1939	68,653	154,801	337	223,791	1,353,936.00
1940	61,977	130,672	32	192,681	1,319,865.00
1941	74,290	138,738	804	213,032	1,657,198.00
1942	42,573	162,899	1,563	207,035	1,830,189.00
1943	57,386	152,626	642	210,654	1,805,304.00
1944	72,239	205,739	25,146	303,124	2,515,900.00
1945	75,556	196,836	56,562	328,954	2,921,112.00
1946	83,515	214,574	1,475	299,564	2,917,800.00
1947	84,952	202,560	1,671	289,183	3,053,772.48
1948	49,117	143,268	23,347	215,732	3,063,531.85
1949	45,941	91,177	.....	172,312	2,969,056.98

(x) Export of commercial sheep was not permitted in 1946 and 1947.

The Department continues to operate the Sheep Improvement Policy. Under this policy a bona fide sheep grower may obtain at cost, with shipping charges prepaid, either one or two rams in each two-year period. Farmers who do not qualify under this policy, and those who purchase breeding ewes through the Department, come under the Live Stock Listing Bureau. This Bureau provides the same service as the Sheep Improvement Policy, with the exception of the prepayment of shipping charges.

The following table itemizes sheep placements in the years 1941 to 1949, inclusive:

POLICY PLACEMENT OF RAMS AND EWES

Year	Live Stock Ewes	Listing Rams	Bureau Rams	Improvement Policy Rams	Policy Total Rams
1941				69	69
1942	11		14	81	95
1943	4		9	26	35
1944	11		3	31	34
1945	4			25	25
1946	5		2	45	47
1947	52		1	39	40
1948				28	28
1949			3	22	25

HORSES

Auction Sales of horses were held in the spring at Calgary, Lacombe, Stettler and Lloydminster. A total of 1,668 horses were sold at an average price of \$69.38 per head. This compares to 2,235 horses sold at six sales, at an average of \$70.31 in the spring of 1948. Quality of horses was not as good as in 1948. The fact that this market exists, indicates that there is a demand for good horses that are well fitted. It becomes increasingly difficult to locate the kind of horses that the Eastern and British Columbia market demands.

The Horse Co-operative Marketing Association Limited, slaughtered approximately 7,000 head of Alberta horses in 1949, compared to 15,483 head slaughtered in 1948.

The June survey of the number of horses on Alberta farms for a number of years shows clearly the trend in horse production.

	No.	No. Decrease	% Decrease
1946	469,000	95,200	16.9
1947	410,900	58,100	12.4
1948	376,600	34,300	8.35
1949	349,400	27,200	7.22

Export of horses for the period 1945 to 1949 is as follows:

	1945	1946	1947	1948	1949
British Columbia	1,023	1,029	696	456	629
Saskatchewan	131	2,692	7,712	3,672	287
Manitoba	502	776	791	854	576
Ontario	1,132	3,033	1,231	562	429
Quebec	4,523	12,433	4,156	2,850	1,545
Nova Scotia	1,225	1,909	1,027	360	212
New Brunswick	564	500	127		16
Prince Edward Island		58	42	55	35
U. S. A.	6,733	6,308	1,740	1,563	1,647
Newfoundland	113	7		40	40
Netherlands	35				
	15,981	28,745	17,522	10,412	5,426

STALLION ENROLMENT

Passing of The Stallion Enrolment Act 1949, together with regulations made pursuant thereto, broadened to some extent the qualifications under which stallions could be enrolled. This legislation replaced The Stallion Enrolment Act (revised Statutes of Alberta, 1942). The new Act and regulations provide for Class A and Class B certificates. Class B certificates qualifies a

horse that has a good breeding record, but that may not be absolutely sound.

Enrolments in 1949 totalled 82. That represents a 37% decrease from the year before.

Following is a summary of enrolments:

Breed	Enrolled	Inspected	Class A	Class B	Disqualified
Percheron	35	12	8	2	2
Clydesdale	5	2	2	...	...
Belgians	9	7	6	...	1
Thoroughbreds	19	10	2	7	1
American Saddle	8	2	2	...	...
Arabian	2	2	2	...	...
Hackney	1	1	1	...	...
Standard Bred	1	2	1	1	...
Palomino	2	2	2	...	...
TOTAL	82	40	26	10	4

ROYAL WINTER FAIR, TORONTO

The twenty-first Royal Winter Fair was held at Toronto, November 15th to 23rd.

Fourteen cars of live stock, comprising 29 horses, 108 cattle, 20 swine and 13 sheep, were exhibited by 53 different Alberta breeders.

The shipment was handled by the Canadian Pacific Railway leaving Edmonton, November 4th and Calgary on November 5th. A satisfactory run to and from Toronto was made. Freight charges to Toronto were paid as follows: 75% by the Dominion Department of Agriculture and 25% by the Alberta Department of Agriculture. The shipment was returned to assembly points by the Railroad, free of charge. The Alberta Department of Agriculture paid decking and partitioning costs and feed costs from points of assembly until stock was returned to points of assembly.

L. M. Rye, North Edmonton, acted in the capacity of overall supervisor of the shipment.

The following awards were received on exhibits:

	Horses	Cattle	Swine	Sheep	Total
Grand Championships	3	...	...	...	3
Reserve Grand Championships ..	1	...	...	...	1
Senior Championships	2	...	...	...	2
Reserve Senior Championships ..	1	...	...	...	1
Junior Championships	2	1	...	...	3
Reserve Junior Championships ..	1	1	...	...	2
Championships	4	...	...	1	5
Reserve Championships	4	...	...	1	5
First Prizes	6	19	1	4	30
Second Prizes	3	8	1	3	15
Third Prizes	6	18	3	1	28
Other Prizes	29	55	7	3	94
TOTAL	47	116	13	13	189

Of special interest were three Grand Championship awards as follows:

Grand Champion Steer—Fed and exhibited by Ed. Noad, Claresholm.

Hereford female—Bred and exhibited by A. W. Crawford-Frost, Nanton.

Hereford bull—Owned and exhibited by A. W. Crawford-Frost, Nanton.

LIVE STOCK FEEDERS' ASSOCIATIONS

Fourteen Feeders' Associations obtained guarantees for loans to purchase live stock for feeding during the 1948-49 season. However, the Wainwright-Edgerton-Chauvin Association did not utilize the credit available, so only thirteen Associations actually operated.

A satisfactory margin between buying and selling price resulted in profitable operations for most feeders even though lifting of the embargo on shipment of cattle to the U.S. in August, 1948, resulted in a high price for feeder cattle that fall.

Profitable feeding operation over a period of years, coupled with a general easing of credit has resulted in many feeders financing their own operation and has lessened the demand on Feeder Association credit.

VOLUME OF OPERATIONS OF ALBERTA FEEDERS' ASSOCIATIONS DURING THE FEEDING SEASON

Association	Address	Cost of Animals	Cattle	Sheep	Total Membership	No. of Members Feeding
Battle River Live Stock Feeders' Ass'n. Ltd.	Camrose	\$ 37,797.55	346	.....	79	14
Bow Valley Live Stock Feeders' Ass'n. Ltd.	Brooks	216,748.05	776	4,002	122	20
Carstairs Live Stock Feeders' Ass'n. Ltd.	Carstairs	15,375.55	149	.....	....	6
Central Alberta Live Stock Feeders' Ass'n. Ltd.	Lacombe	52,686.92	430	.....	69	22
Innisfail Feeders' Ass'n. Ltd.	Innisfail	76,057.35	704	.....	133	35
Lethbridge Live Stock Feeders' Ass'n. Ltd.	Lethbridge	30,151.90	141	1,378	100	11
Raymond-Magrath Live Stock Feeders' Ass'n. Ltd.	Magrath	48,477.59	197	1,798	52	14
Red Label Feeders' Ass'n. Ltd.	Raymond	55,543.58	299	1,987	65	16
South Slope Live Stock Feeders' Ass'n. Ltd.	Brooks	155,025.46	613	2,898	58	32
Taber Feeders' Ass'n. Ltd.	Taber	55,418.52	363	441	52	14
U.I.D. Stock Feeders' Ass'n. Ltd.	Lethbridge	21,928.11	165	252	79	7
Vauxhall-Albion Ridge Feeders' Ass'n. Ltd.	Lethbridge	24,168.28	161	264	....	8
Vermilion & District Live Stock Feeders' Ass'n. Ltd.	Vermilion	48,353.35	440	.....	189	13
Wainwright-Edgerton & Chauvin Live Stock Feeders' Ass'n. Ltd.	Edgerton	.....	.....	.....	....	....
		\$837,732.21	4,784	13,020	998	212

ACTS

THE STOCK INSPECTION ACT

Stock inspection continued to be the major activity of the Live Stock Branch. Stock Inspection staffs were maintained at Calgary, Edmonton and Winnipeg. Deputy Stock Inspectors operated at two points and in addition 32 R.C.M. Police Detachments had Deputy Stock Inspector appointments.

Inspections for the year totalled 716,414 head of live stock. This was a decrease of 61,147 inspections from the previous year which amounted to 7.62%. However, 1948 inspections showed an increase of 25% over 1947. The heavy fall run of live stock taxed the inspection staff to capacity.

Additional investigation of live stock movement was undertaken from the head office.

Arrangements were completed to open a new stock inspection office at Lethbridge, with the start of inspection to coincide with the opening of the new public market at that point.

Carelessness and error in the application of registered brands, the scattered use of non-registered brands, and carelessness in declaring brands by shippers continues to cause inconvenience to shippers and inspectors alike and also increases the work of the head office staff in determining rightful ownership of animals held for brands.

THE BRAND ACT

One thousand two hundred and seventy-eight (1,278) new brands were issued during the year. This number was made up of 1,146 cattle, 127 horse, 1 fox and 4 poultry. Two hundred and thirty-one (231) transfers were registered. There were 4,189 renewals (3,362 cattle, 816 horse, 4 poultry and 7 fox).

Strays, searches and certified extracts numbered 345. Butcher and Hide Dealer's Licenses issued totalled 565.

The approximate number of brands in good standing are as follows:

	1948	1949
Cattle	19,894	21,040
Horses	6,666	6,793
Poultry	27	31
Sheep	23	23
Fox	41	48
	26,651	27,935

During the year the rewriting of Record Book F was completed and some work was done on the new Record Book K.

THE ALBERTA LIVE STOCK AND LIVE STOCK PRODUCTS ACT

There was a 6% decrease in the number of Live Stock Dealer's Licenses issued, compared to the previous year. New applicants were carefully investigated before licenses were issued. One inspector, operating under this Act was well occupied and obtained several convictions for infraction of the Act.

DOMESTIC ANIMALS (UNORGANIZED TERRITORY) ACT

Work continued throughout the year in establishing new pounds, altering boundaries of existing pounds and arranging for appointment of poundkeepers as requests were received.

The outstanding difficulty in pound districts continues to be the low value of horses which results in owners making no effort to locate or return strayed or lost horses.

THE PURE-BRED SIRE AREA ACT

Additional interest was shown in the possibilities of establishing purebred sire areas under this Act.

Incorporating the Municipality of Nelson, No. 105 into the large Municipal District of Athabasca, No. 103 retarded the bringing into effect of purebred sire regulations in that area until such time as petitions are received for the entire area of Municipal District No. 103.

As in former years, much assistance was rendered the Department by members of the Royal Canadian Mounted Police through Stock Inspection and in the administration of a number of the aforementioned Acts. Considerable investigational work was carried out and a number of convictions were obtained regarding stolen stock, the use of unregistered brands and buyers operating without a license.

Assistance was also rendered by the Highway Traffic Board Inspectors, in enforcing regulations relating to the movement of live stock by truck.

Assistance rendered by these two groups, together with the co-operation received from the trade in general, is greatly appreciated.

REPORT OF DAIRY BRANCH

D. H. McCallum, Dairy Commissioner

Supervisors:

L. M. Silcox -	Dairy Factory Inspection and Instruction
J. B. Linneboe	Dairy Branch Laboratory
R. P. Dixon -	Dairy Cattle Improvement
B. J. McBain -	Dairy Cost Study
L. H. Arnold -	Frozen Food Locker Plants
A. F. Bennett -	Dairy Statistics

GENERAL REVIEW

Total milk production during 1949 almost equalled that of the previous year, the decrease being 1,527,000 lbs. or .1%, and amounted to 1,671,075,000 lbs. Considering the very unfavourable pasture season that existed in those areas where dairying is most concentrated, and a reduction in milk cow numbers of 12,000, the very slight decrease in total milk is quite surprising.

The lack of moisture in the northern and central districts resulted in almost no pasture until heavy rains fell after the middle of July. The drought was so severe and prolonged that many dairymen were forced to pasture dairy cows on hay fields. This practice greatly reduced the quantity of hay in the Edmonton district and required extensive purchases from the irrigated sections. Conditions improved rapidly during the latter part of July and fall production was well above that of the previous year. Unquestionably the poor returns from field crops created greater interest in dairying during the fall and early winter. The lack of feed and severe weather conditions during the early months of 1950 may prevent this trend from continuing. Another factor which might influence a poor milk flow for the first part of 1950 is the low feeding value of roughage and coarse grains resulting from early frost damage to the 1949 crop in most districts.

The most outstanding feature in this year's report is the increased average production per cow made under abnormally poor pasture conditions. The increase per cow amounted to approximately 200 lbs. of milk and 7 lbs. of fat, and reflects better care and management along with better breeding.

The total value of dairy products amounted to \$52,560,000, a reduction of \$4,195,000 or 7.4% from the all time high of 1948. Reduced prices for practically all products with the exception of fluid milk sales is responsible for the decreased total value. In the case of creamery butter the average price dropped from 65.53 to 57.3c representing a reduction of 12.5%. The introduction of margarine to Canada which began supplying markets in quantity towards the end of March caused a drop in the butter market six or seven weeks earlier than usual and forced it to lower levels than would have occurred without this competition. A measure of stability was introduced by Order in Council P.C. 1573 which prescribed support prices for creamery butter under the Agricultural Prices Support Act. These support prices

were established on the basis of 1st grade at 59c for the Maritimes, 58c for Central Canada and 57½c for Vancouver. A considerable quantity of Alberta butter was sold to the Agricultural Prices Support Board for storage at Alberta and British Columbia points where it could best be utilized during months of out of storage movement. Undoubtedly this Legislation had a very beneficial effect of stabilizing prices within the Dairying Industry.

On March 29th the Alberta Legislature assented to, "An Act Respecting the Regulation of Control of Margarine." This Act administered by the Department of Industries and Labour provided a measure of protection to the Dairy Industry of Alberta by requiring that the substitute be clearly labelled, have similar moisture and fat composition to butter and if served in public eating places notice must be given either on the menu or a placard prominently displayed. The most important section from the dairymen's point of view prevents the sale, or serving in public eating places within the Province, margarine coloured the natural colour of butter or any shade of yellow which might cause it to be mistaken for butter. Strict enforcement of this regulation will prevent fraud and tend to cheapen the substitute for those who use it.

Rather minor changes in the utilization of milk occurred during the year, reduced quantities were used in the manufacture of creamery and farm dairy butter; while increases are reported for ice cream, cheese, evaporated milk, fluid sales and fed to live stock. The amount fed to live stock reflects the number of calves kept and this would indicate that producers were planning to increase milk cow numbers.

The quality of creamery butter and factory cheese again showed an improvement and established new records for the percentage qualifying for first grade. Exhibits of these products to Canadian Exhibitions again made a very creditable showing and brought considerable honour and distinction to the Province.

PRODUCTION AND VALUES OF DAIRY PRODUCTS 1949
(Preliminary)

Product	Quantity	Milk Equivalent lbs.	% of Total Milk	Average Unit Price	Total Value
Creamery Butter lbs.	31,996,000	749,666,000	44.9	\$.573	\$18,334,000
Farm Dairy Butter lbs.	8,779,000	205,692,000	12.3	.554	4,864,000
Cheddar Cheese lbs.	2,781,000	30,980,000	1.9	.3325	925,000
Net Increase in processing					138,000
Farm Dairy Cheese lbs.	217,000	2,417,000	.1	.3025	66,000
Ice Cream * gals.	1,946,000	33,974,000	2.0	1.41	2,744,000
Misc. Factory Products		34,167,000	2.0	...	2,132,000
Milk and Cream Fluid Sales (including processing charges)		280,479,000	16.8	4.49	12,581,000
Milk and Cream Farm Home consumed		178,000,000	10.7	2.39	4,254,000
Milk Fed Farm Animals		155,700,000	9.3	2.39	3,721,000
Skim milk and Buttermilk for human consumption lbs.	4,679,000	.....	...	1.10	51,000
Skim milk and Buttermilk for animal feed, etc. lbs.	903,382,000	.....	...	.30	2,710,000
Whey lbs.	25,098,000	.....	...	.16	40,000
Totals		1,671,075,000	100.0		52,560,000

* Mix converted to Ice Cream on basis of 100% overrun.

PRODUCTION AND VALUES OF DAIRY PRODUCTS 1948
(Revised)

Product	Quantity	Milk Equivalent lbs.	% of Total Milk	Average Unit Price	Total Value
Creamery Butter lbs.	32,421,000	759,624,000	45.4	\$.6553	\$21,245,000
Farm Dairy Butter lbs.	9,834,000	230,411,000	13.8	.62	6,097,000
Cheddar Cheese lbs.	2,566,000	28,585,000	1.7	.3485	894,000
Net Increase in processing					116,000
Farm Dairy Cheese lbs.	220,000	2,451,000	.1	.3185	70,000
Ice Cream * gals.	1,891,000	27,022,000	1.5	1.34	2,534,000
Misc. Factory Products		31,297,000	1.9	....	1,925,000
Milk and Cream Fluid Sales (including processing charges)		267,812,000	16.0	4.52	12,094,000
Milk and Cream Farm Home consumed		180,300,000	10.8	2.73	4,922,000
Milk Fed Animals		145,100,000	8.7	2.73	3,961,000
Skimmilk and Buttermilk for human consumption lbs.	3,881,000	.....	....	1.10	43,000
Skimmilk and Buttermilk for animal feed, etc. lbs.	939,021,000	.....	....	.30	2,818,000
Whey lbs.	22,733,000	.....	....	.16	36,000
Totals		1,672,602,000	100.0		\$56,755,000

* Mix converted to Ice Cream on basis of 100 % overrun.

ESTIMATED FARM INCOME FROM SALE OF DAIRY PRODUCTS 1949
(Preliminary)

	Milk or Butterfat Pounds	Price	Value
Butterfat for Creamery Butter ..	26,237,000	\$.5885 per lb.	\$15,440,000
Milk and Butterfat for Ice Cream (milk basis)	33,974,000	2.43 per 100 lbs.	826,000
Farm Dairy Butter sold	605,000	.554 per lb.	335,000
Milk for Cheesemaking & Concentrating	65,147,000	2.49 per 100 lbs.	1,624,000
Milk and Cream for Fluid Consumption	280,479,000	3.47 per 100 lbs.	9,720,000
Total Income			\$27,945,000

ESTIMATED FARM INCOME FROM SALE OF DAIRY PRODUCTS 1948
(Revised)

	Milk or Butterfat Pounds	Price	Value
Butterfat for Creamery Butter	26,585,000	\$.684 per lb.	\$18,189,000
Milk and Butterfat for Ice Cream (milk basis)	27,022,000	2.78 per 100 lbs.	752,000
Farm Dairy Butter sold	792,000	.62 per lb.	491,000
Milk for Cheesemaking and Concentrating	59,882,000	2.79 per 100 lbs.	1,669,000
Milk and Cream for Fluid Consumption	267,812,000	3.52 per 100 lbs.	9,415,000
Total Income			\$30,516,000

DAIRY MANUFACTURING

CREAMERIES

During the year 93 creameries were in operation. The average output per plant was 344,046 lbs. which is a reduction of more than 12,000 lbs. below the 1948 average.

New creameries were established at Glendon and Medicine Hat during the year. The Glendon plant opened April 20th, while the Purity Dairy, Medicine Hat, added a creamery department to their milk plant and commenced operations May 9th.

The Central Alberta Dairy Pool purchased the Fertile Valley Creamery, Ponoka, on April 1st. This business was consolidated

with the existing Pool Branch at this point and the Fertile Valley plant closed.

The Bluffton Creamery owned by Montalbetti Bros. of Bluffton was completely destroyed by fire on July 29th. While temporary arrangements were made to manufacture the butter at Alix and later Wetaskiwin, the business was purchased by the Central Alberta Dairy Pool on September 19th. A new plant is under construction at Bluffton which will be completed early in 1950.

The Southern Alberta Dairy Pool with creameries at Calgary, Acme, Hanna and Brooks, sold all units on December 1st. The Calgary plant is now owned by the Co-operative Milk Company, Calgary, while the other branches were purchased by the Central Alberta Dairy Pool.

CHEESE FACTORIES

While only 14 cheese factories operated during the year as compared to 18 the previous year, cheese production increased by 8.4% to a total of 2,780,883 lbs. The average make per factory was 198,635 lbs. as compared to 142,556 in 1948. This increase is due to less competition from butter during the past year and less milk being transferred to the fluid milk plants; at the same time milk from several patrons, which formerly went to a concentrating plant, was diverted to cheese during the year. The factories at Crooked Creek, Sunnyslope and Mountain View did not operate during 1949, while the Ryley factory did not manufacture cheese; it confined its operations to skimming and the drying of milk solids, not fat.

The Rosemary factory operated by the Clover Leaf Cheese Co. of Calgary burned to the ground on June 18th after only a few weeks of operation.

The Central Alberta Dairy Pool purchased the Neapolis factory on May 1st.

DAIRIES

The recent development of establishing these plants at country points to assure a safe milk supply continued during the past year. There are now 67 milk pasteurizing plants in Alberta.

The following plants were established or changed ownership during the year:

Randall's Dairy, High Prairie, commenced operations May 1st.

C. DesLauriers, Morinville, commenced operations August 9th and the plant burned down early in November.

J. Leduc's Dairy, Morinville, commenced operations August 31st.

The Coaldale Cheese Factory installed a milk processing department and started milk deliveries October 1st.

The Woodland Dairy Co. Ltd., Calmar, installed milk equipment and opened that Department on December 13th.

The Northern Alberta Dairy Pool Ltd. purchased the Bushell Dairy, Vermilion, and commenced milk deliveries May 22nd from the creamery plant.

The City Dairy, Drumheller, moved on January 9th to a new plant centrally located.

CREAM QUALITY

The quantity and quality of cream received by Alberta Creameries during 1949 is shown in the following tabulation, for sake of comparison corresponding figures for previous years are included.

BUTTERFAT RECEIPTS BY GRADES

	1949		1948		1939	
	Pounds	%	Pounds	%	Pounds	%
Cream Received	80,152,889		80,816,438		73,530,777	
Average Test		(34.8)		(34.9)		(34.4)
Butterfat:						
Table Grade	259,105	(.9)	205,073	(.7)	727,445	(2.9)
Special Grade	14,907,146	(53.5)	14,480,712	(51.4)	17,234,846	(68.1)
First Grade	11,718,283	(42.1)	12,152,747	(43.2)	6,625,918	(26.2)
Second Grade	891,079	(3.2)	1,249,666	(4.4)	667,439	(2.6)
Off Grade	87,779	(.3)	83,572	(.3)	35,425	(.2)
	27,863,392	(100.0)	28,173,770	(100.0)	25,291,073	(100.0)

There was some improvement in cream quality during the year when an additional 2.3% qualified for the two top grades with a corresponding decrease in first and second grades. However, the quality is still far below the pre-war level as indicated by the percentage in each grade during 1939. The spread between first and second grade butterfat increased from 8c in 1948 to 16c in 1949, due entirely to the lack of demand for undergrade butter following the introduction of butter substitutes. The loss to Alberta cream producers on the 45.6% of cream marketed below Special grade amounted to over \$415,000. This calculation was based on a loss of 2c for First Grade, 18c for Second Grade and 24c for Off Grade cream.

BUTTER QUALITY

GRADES OF ALBERTA CREAMERY BUTTER (FEDERAL GRADING)

Year	Total lbs. Graded	% of Make Graded	Percentage in Each Grade				% 93 Score & Over
			First	Second	Third	B.T.G.	
1938	27,839,952	(89.1)	85.7	7.9	5.4	1.0	(51.4)
1940	27,243,216	(91.4)	88.1	7.1	4.4	.4	(55.8)
1942	33,614,392	(90.9)	84.1	10.2	5.0	.7	(46.4)
1944	34,797,504	(92.0)	87.0	7.0	5.7	.3	(46.0)
1946	27,842,304	(90.5)	88.4	5.5	5.7	.4	(25.4)
1948	30,214,408	(93.2)	90.5	4.8	4.3	.4	(36.2)
1949	30,013,088	(93.8)	92.6	5.5	1.7	.2	(36.8)

The quality of Alberta butter was the highest on record when 92.6 percent qualified for first grade. There was also a slight increase in the percentage scoring 93 points or over considered top commercial quality. This is a very worthy achievement and indicates a high standard of efficiency in Alberta creameries. There was a noticeable decrease in the percentage of butter graded third grade and below third grade. This trend is very desirable as butter of this quality is no credit to the industry.

CHEESE QUALITY**GRADES OF ALBERTA CHEESE (FEDERAL GRADING)**

Year	Total lbs. Graded	% of Make Graded	Percentage in Each Grade				% 93 Score & Over
			First	Second	Third	B.T.G.	
1938	1,531,530	(62.5)	57.8	41.3	.7	.2	(18.7)
1940	1,935,750	(71.5)	70.6	28.4	.9	.1	(23.0)
1942	3,785,718	(96.8)	81.0	18.7	.2	.1	(43.7)
1944	3,339,147	(89.9)	79.0	20.4	.4	.2	(29.2)
1946	3,100,332	(96.0)	79.6	19.8	.4	.2	(26.9)
1948	2,531,178	(98.7)	88.5	11.0	.5	.0	(34.3)
1949	2,650,107	(95.3)	89.7	9.7	.4	.2	(35.9)

Cheese quality again showed an improvement and reached a new all-time record during the year. A higher percentage qualified for first grade and also 93 points. Fewer factories with a larger output per plant was at least partly responsible for the improved quality.

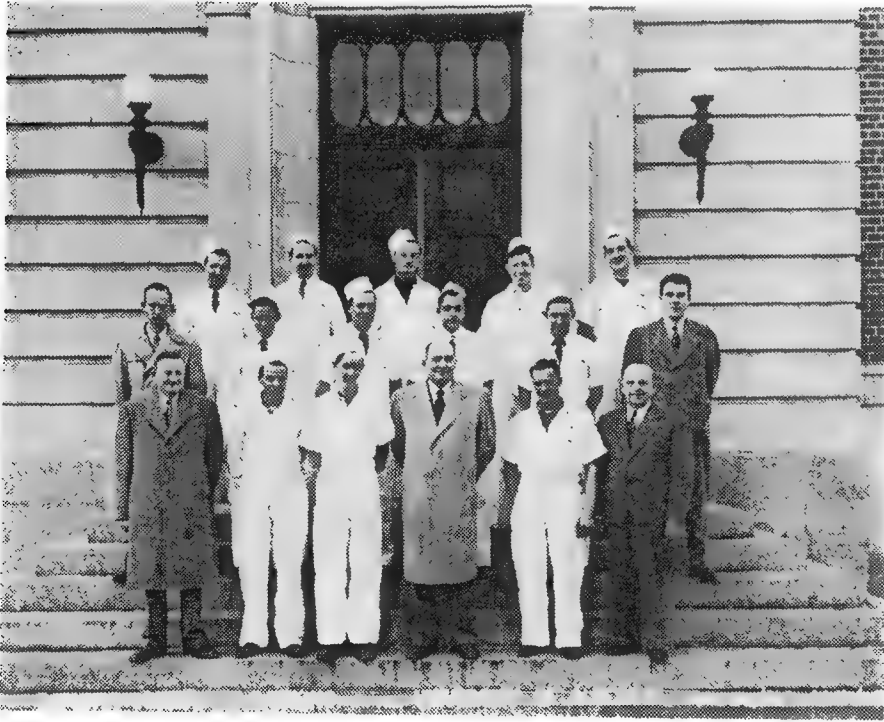
CHECK WEIGHING OF BUTTER

All butter purchased by the Agricultural Prices Support Board was check weighed going into storage and again as it went into consumption channels. This policy greatly increased the number of weight certificates issued. A total of 95,375 boxes representing 5,326,732 lbs. of butter were check weighed.

The check weighing of cheese by officials of the Dairy Branch is a new service to the industry. One hundred and twenty boxes were checked for weight and the results indicated a shrinkage of 1.1 percent.

DIPLOMA COURSE IN DAIRYING

As in former years the Dairy Branch co-operated with the Department of Dairying, University of Alberta and Canadian Vocational Training in conducting the annual six month's Diploma Course in Dairying. The Alberta Dairymen's Association Gold Medal for the highest standing in the 1948-49 Course was won by A. O. Aspeslet of Round Hill. Fourteen students registered for the fifth consecutive course which commenced October 31st, 1949, and will continue until April 22, 1950.



Back Row: Kadzilauskas, W.; Smith, J.; Dyck, A.; Gathercole, F.; Hlina, W.

Middle Row: Nelson, G.; Gilchrist, W.; Dornan, P.; Witherel, S.; Reiersen, E.; Smith, L. M.

Front Row: Wood, F. W.; Edmondson, R.; Gleeson, R.; McCallum, D. H.; Cheremshynsky, P.; Thornton, H. R.

DAIRY FACTORY INSPECTION AND INSTRUCTION

For complete dairy inspection service the province is divided into 8 districts, each covered by an inspector whose duties include inspection and instruction work at the creameries, combination plants, milk plants, dairies and frozen food locker plants. A cheese factory instructor, with headquarters at Edmonton, covers northern cheese plants regularly. He also visits four southern and centrally located factories periodically. The regular inspection of those plants are carried out by inspectors at Calgary and Lethbridge.

A. N. Macdonald, an inspector with the Dairy Branch since 1920 retired in May of this year and his position at Calgary has been filled by A. D. Bassett, graduate in dairying from the University of Alberta.

Total visits made by inspectors at dairy plants was 1,909.

Summarization of routine grading and testing work carried out during these visits shows 76,190 cans of cream check graded, 24,904 check tests plus 1,990 initial tests for butterfat content, made on shipments of milk and cream received at dairy plants.

In the interests of quality improvement of raw milk and cream being received at plants, a periodic checking of shipping containers by inspectors has been in effect since 1945. It is encouraging to note that there has been a decided decrease in the number of containers considered unfit to use for milk or cream. Rusty cans and those in bad state of repair, which have an appreciable deteriorating effect on milk and cream quality are not being used to the extent they were formerly. Undoubtedly, this has assisted in the increase of top grade dairy products being manufactured.

Practically all of the samples submitted to the Dairy Branch Laboratory (see Laboratory Services), under the headings Butter for yeast and mould analyses, water samples, creamery surveys, butter samples for pH determination, control service to milk distributors and many miscellaneous samples were taken by district inspectors. Analytical work in these phases by the Laboratory is now indispensable to instructional work at dairy plants. Results of analyses have invariably provided solutions to problems in most important plant procedures. Here again, highest average quality products is the ultimate goal.

Milk for Cheese factories is received or rejected according to quality at time of delivery. Factory patrons are encouraged to supply nothing but top quality milk to prevent losses in income to themselves through rejection of low quality milk. Thorough inspection of milk by factory personnel, before accepting, is routine at all plants. In this duty, Dairy Branch personnel render all possible assistance by making individual checks and quality tests, to point out to patrons where necessary, how improvement can be effected. For this purpose besides the usual checks for taste and smell, the sediment and Methylene Blue tests are used regularly.

Quality competitions for dairy products and judging competitions for producers are organized and conducted by district Dairy Branch personnel. Such competitions are held in connection with dairy field days and local fairs. Dairy Branch instructors also act in the capacity of judges for regular milk or cream competitions held at the annual Dairymen's Association Conventions.

LABORATORY SERVICES

The laboratory has been called on to examine 20,705 samples during the year which is by far the greatest number on record.

The following table gives the distribution of these samples and for comparison the corresponding figures for 1948 have been included.

	1949	1948
Butter samples for mould and yeasts	3,904	3,542
Water samples	33	24
Bacteriological creamery surveys	8	9
Butter samples for pH	764	425
Milk samples for mastitis control service	7,504	3,476
Milk plant control service	3,108	2,235
Milk samples for cow testing service	5,051	4,607
Egg melange	201	411
Miscellaneous	64	243
	20,705	14,972

It will be seen that samples coming under the mastitis control programme have more than doubled during the year.

Using the mould and yeast count of the butter as a yard stick for measuring creamery sanitation the following table gives a picture of what has been accomplished since 1925.

Year	No. of Analyses	Classification in Percentage			
		Excellent (0 to 10)	Good (11 to 50)	Fair (51 to 100)	Poor (Over 100)
1925	686	3.6	12.7	12.1	71.6
1930	2,799	35.7	20.3	10.3	33.7
1935	2,177	55.4	17.9	7.7	19.0
1940	3,013	64.6	16.0	7.2	12.2
1945	4,050	68.2	14.9	5.7	11.2
1949	3,904	69.1	17.1	5.1	8.7

The fact that it has been possible to maintain such a high standard of sanitation indicates that the mould and yeast count is serving its purpose and that the creamery men are making good use of the information obtainable through it.

The neutralizing practices employed at the creamery have been checked through pH determinations of the butter. In the following table has been summarized the result obtained for the 764 samples submitted and a comparison has been made with the result of previous years.

pH Range	1945	1946	Percentage		
			1947	1948	1949
Over 7.7	6.6	1.6	3.5	3.4	5.0
7.3 to 7.7	16.6	27.3	19.2	17.9	32.6
6.7 to 7.2	46.3	54.8	64.5	67.7	55.7
6.2 to 6.6	25.3	14.7	11.0	9.1	4.7
Below 6.2	5.2	1.6	1.9	2.0	2.0

The table indicates that the tendency of the buttermakers is towards a sweeter type of butter.

The laboratory control service to milk distributing plants has been extended during the year to include all four distributing plants in Edmonton. In addition the service has been used extensively by pasteurizing units located at country points. With the increased demand of the consumer for a safe milk, it is probable that this type of service will continue to expand.

Egg melange is the only product where samples submitted showed a noticeable decline during the year, a direct result of a lower export quota to Great Britain. With no quota established for 1950 it may be assumed that very few samples will be submitted.

The Babcock testing in conjunction with the provincial cow testing service showed an increase of 444 tests during the year mainly due to the fact that the testing centre at Olds was discontinued with the samples temporarily coming to this laboratory.

Other services such as propagating and distributing starters to Alberta cheese factories, preparing and handling solutions and indicators used by creameries and cheese factories has been continued as in former years.

In addition to the foregoing there has been a limited amount of investigational work carried on at the laboratory in connection with dairy problems and agriculture in general.

DAIRY CATTLE

The number of dairy cattle on Alberta farms, as determined by the June survey of the Dominion Bureau of Statistics was 315,000 head. This is a decrease of 12,000 or 3.7% below the survey figure for the same date in 1948. As was the case in 1948 considerable numbers of dairy stock were sold during 1949, with many of the animals going to American buyers. Favourable returns from other farm enterprises contributed to a reduction in the number of dairy cattle retained.

On October 24th the "Seymour" herd of C. S. Wiseman, Galahad, was dispersed by auction. The average price paid for the 25 head sold was \$355.00 with the 13 milking females averaging \$415.00. Top price of the sale was \$1,000.00 for "Seymour Nora Ormsby", a cow grading "very good", who will complete a six-year old production record in excess of 28,000 lbs. of milk.

An increased number of purebred Holstein breeders utilized the services of the bulls at the Artificial Breeding Centre at Olds. This made available a large number of bull calves out of well bred stock for use as herd sires. The distribution of these bulls throughout the province will undoubtedly increase the general level of production per cow.

The following tabulation shows the average production of milk and butterfat for all Alberta cows, based upon the total quantity of milk produced, and the total cows kept as reported for June 1st, 1949. An estimated test of 3.6% is used for butterfat calculations and for sake of comparison similar figures for the previous years are included.

	1949	1948	1947	1946	1945	1940
Average Milk Production, lbs. . . .	5,305	5,115	5,381	5,082	4,600	4,400
Average Butterfat Production, lbs.	191.0	184.1	193.7	183.0	165.5	158.4

Despite the poor pasture, hay and grain crops in all but the Peace River and extreme southwest corner of the province, milk production per cow shows a significant increase over last year. The upward trend since 1940 indicates a better type of cow, with improved feeding and management practices.

COW TESTING AND HERD IMPROVEMENT

The cow testing service offered to all herd owners in the Province was continued throughout the year. Following is a brief outline of the two plans in operation.

Plan I

The herd owner weighs each milking of every cow in the herd and submits to the testing centre, once a month, a representative sample of milk from each cow, together with individual production totals.

Plan II

The herd owner weighs one day's production of every cow in the herd, and submits these weights together with a representative sample of milk from each cow, to the testing centre once a month. The monthly production is then computed from the one day's weighing.

Testing Centres

Testing centres for determining the butterfat content of the milk samples were in operation at the Dairy Laboratory, Edmonton; Olds School of Agriculture, Olds; and the office of the Creamery Inspector, Camrose. The herds being tested at Olds were transferred to the Edmonton centre on October 1st.

The following table indicates the number of herds, and cows under test at each centre:

	No. of Herds	No. of Cows
Edmonton	44	649
Olds	27	416
Camrose	30	392
	101	1,457

Field Activities.

Personal farm visits by the Supervisor of Dairy Cattle Improvement, to a number of herds under test were made throughout the year and assistance given in analyzing records and yearly reports. Problems of breeding, feeding, and management were discussed, milk scales examined and check tests lifted to ensure the accuracy of records.

Addressing the dairy meetings, field days and Junior Dairy Calf Clubs formed an important part of the extension work in this field.

In co-operation with the Live Stock Branch, fifty-three dairy bulls were placed under the cattle improvement policy.

During the fall months twenty-seven head of purebred Holstein cattle were purchased by the Supervisor for use at Government Institutional farms.

The following tabulation sets forth the average production of the herds under the Provincial Cow Testing Service. Figures for the past two years have been included for the sake of comparison.

	Plan I	1949 Plan II	Total	Plan I	1948 Plan II	Total	1947 Total
No. herds under test	75	26	101	84	20	104	96
No. cows under test	941	516	1,457	1,030	373	1,408	1,369
Average number of cows per herd	12.5	19.8	14.4	12.2	18.9	13.5	14.2
Herd averages on the basis of cow years (T)							
No. of cow years	689.46	357.03	1,046.9	731.42	228.9	958.7	939
Average production of milk lbs.	8,705	8,398	8,601	8,213	8,595	8,307	8,588
Average production of butterfat lbs.....	329.9	296.0	318.31	316.1	332.5	320.1	322.0
Average test (%)....			3.70			3.85	3.75

(T) The total number of cows on test during the year is used in determining the herd average, except where new cows are placed on test, or a cow is sold or dies, in which case only that part of the year in which she produces is used.

There were three less herds but forty-nine more cows under test during 1949 than in the previous year.

It will be noted from the table that the number of cows tested under Plan II has increased every year since the plan

was inaugurated late in 1946, whereas the number testing under Plan I has decreased. The reaction, of herd owners to records based on one day's production each month, has been more favourable since the Dominion Record of Performance now officially recognizes this system of milk recording. This plan is particularly attractive to owners of large herds where daily weighings present a problem.

The average production of milk per cow showed an increase of 294 lbs. while the average production of butterfat showed a decrease of 1.8 lbs. It will be seen that the average test was 0.15% lower than last year. This fact is in agreement with the numerous reports of low testing milk received by the Dairy Branch during the past year.

Herd owners receive an annual report showing the average of their herd and the average of all cows under test. In addition they receive a pictorial graph showing each cow's production thus making it possible to carry out an intelligent culling, breeding, and feeding program.

Certificates were issued for cows attaining a certain standard of production on the following basis:

	Mature Cows	4-year-old (88%)	3-year-old (77%)	2-year-old (67%)
Gold Seal	522	460	402	350
Red Seal ..	373	328	287	250
Blue Seal	224	197	172	150
Green Seal	300	264	231	201

The number of certificates of each classification for the past 3 years is listed below:

	1949	1948	1947
Gold Seal	55	47	56
Red Seal ..	196	207	216
Blue Seal	263	288	263
Green Seal (Plan II)	144	72	42
Statements ..	131	88	83
Total	789	702	660

It will be noted that the number of certificates issued during the past year shows a substantial increase.

There was a decrease in the number of herds of 5 cows or more qualifying for the Honour Roll with an average of over 300 lbs. of butterfat per cow. The following list includes the 44 herds which qualified in 1949. There were 47 herds above the 300 lbs. average during 1948.

HONOUR ROLL, 1949

Name	Address	No. of Cows	Ave. lbs. Butterfat
Alexander, W. W.	Picture Butte	15	439.5
Armstrong, Rae	Olds	9	368.3
Antrim, R. L.	Rocky Mtn. House	16	352.2
Bacon, Ross	North Edmonton	18	385.4
Bailey, W. L.	Wetaskiwin	17	400.9
Barry, M. P.	Fort Saskatchewan	6	393.9
Basilian Pathers	Mundare	20	316.4
Black, William	Camrose	7	452.8
Choice Dairy	Medicine Hat	24	458.8
Culshaw, R.	Sedgewick	10	301.9
Diggie, J.	Bentley	15	359.8
Dowdell, W. C.	Millet	15	328.9
Erickson, J.	Bentley	17	416.2
Flach Brothers	Opal	22	317.7
Forbes, W. C.	Innisfail	9	477.7
Fulks, S. R.	Waskatenau	10	399.1
Gould, S. P.	Rosalind	7	360.4
Grey, Kenneth	Innisfail	11	300.5
Gunton, A. E.	Mayerthorpe	6	391.0
Hoeve, J.	Lacombe	12	399.2
Jensen, C. T.	Lacombe	24	308.1
Kamps, A.	Lacombe	22	354.7
Kelstad, O. N.	Armena	6	454.5
Keotke, O. H. F.	Holden	22	321.8
Magneson, E.	Ryley	19	368.9
Meadalh, E.	Bawlf	11	366.2
Meyers, G. P.	Millet	21	344.8
Paxton, J.	Innisfail	6	385.0
Poffenroth, W. C., and A. F.	Dewinton	31	396.5
Quail, H. W.	Round Hill	11	346.4
Quantz, A. G.	Innisfail	7	348.3
Robertson, J. G.	Camrose	23	318.5
Rogers, J.	Lacombe	28	377.2
Schubert, H.	Hay Lakes	14	367.0
Sisters of Charity	St. Albert	34	368.4
Smith, Wm.	Didsbury	14	314.5
Stauffer, H. E.	Tofield	11	329.3
School of Agriculture	Vermilion	28	342.9
Wagner, R. A.	Millet	16	301.1
Westmancoat, R. K.	Ryley	11	309.9
Wilkinson, C. H.	Clover Bar	21	426.3
Winsness, Wm.	Ryley	27	387.6
Wolfer, Mrs. J.	Perryvale	9	324.7
Yoder, E. E.	Tofield	10	439.9

DAIRY COST AND FARM MANAGEMENT SERVICE

Considerable expansion has taken place in this work since a year ago. The number of farm accounts closed and analyzed increased from 65 to 103. To obtain the 103 completed accounts, 120 were opened and at least two calls made by one or the other of the two research economists employed on this project.

DISTRIBUTION OF MIMEOGRAPHED BULLETIN "DAIRY FARM COSTS AND MANAGEMENT 1947-1948."

When doing the field work of closing accounts at the farms co-operating, a summary of results (1947-48) was left at each farm. The analysis of each farmer's own record was explained and discussed showing where he excelled over the average results for that particular group or where he was deficient in the management of his business. It was pointed out that if improvements were made as suggested from cost account analysis, the net earnings could be increased; the impact of the changes made could reduce expenses or increase receipts, either or both of which would increase net earnings to the operator.

After the completion of field work for the past summer, analysis of the records was carried on during the fall to compile the findings of the cost of production data and make available at an earlier date than in previous years. Further detailed analysis

of the factors of efficiency as affected by management are to be completed later in the winter. The farm records for Calgary and Edmonton were analyzed in time for the public milk hearings held in November. A breakdown of dairy costs was submitted as evidence along with a profit and loss statement on the averages for the districts. Fall calls were made to all co-operators in Calgary and Edmonton to get their yields per acre of grain and hay and the number of tons and price per ton of all roughage bought and sold on these farms. These figures were also submitted at the milk hearings.

COMPARISON OF HIGH, MEDIUM, AND LOW COST HERDS (1947-48)

When the farms under study in the Edmonton and Calgary areas were divided into three equal groups on the basis of cost, a noticeable difference was seen in the average size of herd and level of production among the groups. Farms with the highest cost were smaller, averaging 24 cows per herd as compared with 34 for the medium and 38 for the low-cost groups. The average production in the high-cost herds was considerably lower than in the other two groups. The average for the high-cost group was 228 lbs. fat, for the medium group 287 lbs. fat, for the low-cost 296 lbs. fat, when shown in terms of 3.5 per cent milk per cow annually.

The results from this study show that small herds do not always have the highest production per cow. The general belief is that a small herd will receive more individual attention with consequent higher production per cow. This is probably true up to a point but there are also other considerations entering into the picture which may more than offset the extra time spent attending the small herd. For instance, it is more feasible for the medium sized or large herd to have a more expensive and higher quality herd sire. Quite often a smaller herd is treated as somewhat of a side-line and hence will not receive efficient management in the feeding program. Similarly in planning the dates for freshening to give maximum yearly production there is less attention paid to careful management than is usual for the larger herds.

The average cost of production of the high-cost group was 28 per cent above the average of all farms. The low-cost group had an average cost 23 per cent lower than the average for all three groups.

The high-cost group had lower production per cow, smaller herds, more hours spent per cow, and they were less efficient in conversion of feed to milk than were the medium or low-cost groups. The high-cost group fed about \$9 more feed per cow than did the low-cost group.

ADDITIONAL DATA FROM RECORDS ON FEEDING PRACTICE

An analysis of the records on file of the cost study since 1941 was made in order to find out the feed requirements for milking cows at certain levels of production. This was submitted to the

Dairy Branch for reference by the District Agriculturists as a handy guide for practicing or prospective dairymen.

FROZEN FOOD LOCKER PLANTS

The establishment of frozen food locker plants has continued at a rapid pace during 1949. Sixteen new plants were put into operation bringing the total to 134 at the close of the year. The 134 plants have a total of 44,020 lockers installed, an increase of 8,449 or 23.8% over 1948.

One cold storage plant discontinued storing animal foods and at the close of the year there were four animal food cold storage plants licensed under the Act.

The new plants constructed during the year are attractive, convenient for employees and patrons and equipped with the most modern equipment for processing, freezing and refrigerating the various products.

The Rosemary plant was completely destroyed by fire on June 18th, 1949, and present indications are that this plant will not be rebuilt.

Inspectors of the Dairy Branch made 665 inspections during the year compared with 486 for 1948. Regulations of the Frozen Food Locker Act were revised by Order in Council No. 487-49 and became effective May 1st, 1949. The new regulations have as an objective, the improvement of products and services that should be expected from a modern locker plant. The most important changes required lower temperatures in the locker room, and the installation of proper facilities for washing and sterilizing equipment. All plants are to be brought up to the requirements of the regulations by May 1st, 1950.

During the year eleven meetings were held in connection with official openings of new plants. A total of 2,390 attended or an average of 217 per meeting. The meetings, sponsored by the local operators were addressed by the Supervisor and the local District Home Economist. Information on the preparation and packaging of fruits and vegetables for freezing, the selection of animals for home consumption, the proper methods of slaughtering and preparing the meat for storage, was given those attending the meetings. Copies of the Department's Bulletin No. 72 "Preserve by Freezing" were distributed and films dealing with frozen foods were shown at all meetings.

Considerable interest was manifest in the exhibit prepared by the Dairy Branch for the Edmonton Exhibition which showed a model locker plant and picture displays of approved methods of preparing foods for freezing.

The fifth Annual Convention of the Alberta Quick Freeze Locker Association was held in Calgary, March 21st and 22nd, 1949. Approximately 300 operators and employees attended. The program consisted of practical demonstrations and lectures by recognized authorities in this field. The highlight of the Convention was an address by Mr. J. Trullinger of Portland, Oregon.

The curing competition again created a great deal of interest; forty-three entries were received for the three sections,

namely, Standard Smoked Ham, Tenderized Smoked Ham and Side Bacon.

First prize in each section was won by Duggan's Foodland, Camrose; Taber Frozen Foods, Taber; and Stony Plain Co-op., Stony Plain, respectively. Shields for the 1st prize winners were donated by Griffith's Laboratories Ltd., while certificates to the 2nd and 3rd prize winners of each section were issued by the Alberta Quick Freeze Locker Association.

The Bruce Robinson Merit Award Shield and cash prizes for the most ideal plants operating during 1948 were announced at the Convention banquet.

First prize was won by Frozen Food Locker Co., Edmonton, J. D. Wolch, Manager; 2nd prize went to the Western Lockers Ltd., Medicine Hat, A. J. Currie, Manager; while 3rd prize was won by the Taber Frozen Foods, Taber, A. S. Odland, Manager.

The judging and scoring of the plants as in former years was conducted by officials of the Dairy Branch. Each operator received a detailed score of his plant and the top scoring plant following the Convention, thus allowing him an opportunity of improving his plant to score higher in future competitions.

Following is a list of Frozen Food Locker Plants put into operation during 1949:

Andrew Locker PlantAndrew
Barrhead Frozen Food Lockers Limited..Barrhead
Beaverlodge Meat MarketBeaverlodge
Valley Lockers LimitedBig Valley
Scotty's Meat Market and Lockers ..Calmar
Carmangay Locker PlantCarmangay
Hanna's Frozen FoodsCalgary
Elnora Meat MarketElnora
Gibbons Cold Storage and Meat Market ..Gibbons
Hay Lakes Meat and LockersHay Lakes
Lamont Locker StorageLamont
Pioneer Meat MarketSedgewick
Bi-right StoreVauxhall
Vermilion Food Locker Service
& Meat MarketVermilion
Young's Quick FreezeVeteran
Model Meat and LockersWainwright

The following statistics are tabulated from information received on monthly reports and covers the twelve month period December 1st, 1948, to November 30th, 1949. Similar statistics for the same period a year earlier have been included for comparison.

	1948		1949	
	Pounds	Percent	Pounds	Percent
Fresh Meats	7,833,066	75.7	9,451,764	75.9
Fish	66,539	.6	150,478	1.2
Poultry	549,144	5.3	742,388	6.0
Game Birds	72,747	.7	80,626	.6
Big Game	94,076	.9	226,026	1.8
Cured Meats	1,225,432	11.8	1,259,717	10.1
Lard Rendered	120,971	1.2	133,600	1.1
Fruits	193,424	1.9	163,527	1.3
Vegetables	145,504	1.4	148,587	1.2
Miscellaneous	52,527	.5	103,530	.8
	10,353,410	100.0	12,460,243	100.0
			1948	1949
Number of plants reporting			118	134
Number of lockers installed			35,571	44,020
Average number of lockers installed			312	329
Number of lockers rented, December 1st			32,616	40,871
Percentage of lockers rented, December 1st			91.7	92.8
Average pounds food stored per locker, with complete service			334.8	320.7
Average pounds food stored per locker, without complete service			194.2	179.4
Average poundage per locker, all plants			317.4	304.9
Average pounds per locker on the basis of lockers rented for 12 months			359.2	328.8
Inspections during year			486	665

DAIRY STATISTICS

The following tables are included for general information:

ALBERTA MILK PRODUCTION AND UTILIZATION

Year	Percentage of Milk Used						Fed Farm Animals
	Total Milk Production in Million lbs.	Creamery Butter	Dairy Butter	Factory and Home Made Cheese	Miscellaneous Factory Products	Milk and Cream Consumed	
1920	784	35.9	27.8	.6	.9	34.8*	
1925	923	50.6	24.5	1.7	.5	22.7*	
1930	1,077	38.5	25.8	1.2	.9	25.1	8.5
1935	1,384	39.1	22.0	1.3	1.4	25.6	11.6
1940	1,671	41.8	21.0	2.0	1.5	24.9	8.8
1945	1,731	46.9	12.1	2.7	2.3	26.7	8.8
1946	1,658	43.5	13.0	2.3	2.6	29.3	9.3
1947	1,700	44.2	13.1	2.2	3.2	28.3	9.0
1948	1,673	45.4	13.8	1.8	3.5	26.8	8.7
1949 Prelim.	1,671	44.9	12.3	2.0	4.0	27.5	9.3

*Includes Milk otherwise used.

CREAMERY BUTTER PRODUCTION
(By Years)

Year	Creameries	Pounds Butter	Av. Output Per Creamery	Selling Value Total	Cents per lb.
1906	42	1,960,356	46,675	\$ 415,800	(21.24)
1910	60	2,238,078	37,301	575,000	(25.69)
1915	57	7,544,148	132,353	2,021,448	(26.79)
1920	53	11,821,291	223,043	6,555,509	(55.45)
1925	99	19,630,101	198,284	6,959,059	(35.45)
1930	92	17,716,744	192,573	4,968,227	(28.04)
1935	97	23,094,707	238,090	4,588,917	(19.90)
1940	95	29,796,520	313,647	6,647,604	(22.31)
1945	91	34,692,917	381,241	11,389,875	(32.83)
1946	92	30,744,000	334,174	11,440,000	(37.21)
1947	91	32,062,000	352,222	16,407,000	(51.19)
1948	91	32,421,000	356,275	21,245,000	(65.53)
1949 Prelim.	93	31,996,000	344,046	13,334,000	(57.30)

CREAMERY BUTTER PRODUCTION
(By Months)

	1948 Pounds	1949 Pounds	% Increase - Decrease
January	1,460,328	1,390,228	- 4.8
February	1,347,520	1,333,667	- 1.0
March	1,832,950	1,688,983	- 7.9
April	2,053,027	2,049,228	- .2
May	2,964,567	3,258,352	x 9.9
June	4,771,752	4,382,807	- 8.2
July	4,890,386	4,424,060	- 9.5
August	4,372,813	4,361,125	- .3
September	3,224,054	3,302,554	x 2.4
October	2,347,317	2,478,862	x 5.6
November	1,696,863	1,841,387	x 8.5
December	1,459,894	1,484,980	x 1.7
	32,421,471	31,996,243	- 1.3

CREAMERY BUTTER PRODUCTION
(By Regional Divisions)

	1948	1949	
Northern, Twp. North of 47	15,715,942	15,864,259	x .9
Central, Twp. 34 to 47	11,094,765	11,125,703	x .3
Southern, Twp. 1 to 33	5,610,764	5,006,281	- 10.8
	32,421,471	31,996,243	- 1.3

DEPARTMENT OF AGRICULTURE

CHEDDAR CHEESE PRODUCTION
(By Years)

	Factories	Pounds Cheese	Av. Output Per Factory	Selling Value	
				Total	Cents per lb.
1906	7	97,739	13,963	\$ 13,000	(13.30)
1910	11	220,000	20,000	27,500	(12.50)
1915	13	381,832	29,372	68,441	(17.93)
1920	7	398,750	56,964	110,355	(27.70)
1925	14	1,473,835	105,274	306,604	(20.80)
1930	8	1,035,352	129,419	175,392	(16.94)
1935	11	1,364,526	124,048	168,280	(12.33)
1940	18	2,705,853	150,325	385,584	(14.25)
1945	18	3,985,160	221,393	903,309	(22.67)
1946	18	3,231,000	179,500	746,000	(23.09)
1947	17	3,078,000	181,053	901,000	(29.28)
1948	18	2,566,000	142,556	894,000	(34.85)
1949 Prelim.	14	2,781,000	198,635	925,000	(33.25)

CHEDDAR CHEESE PRODUCTION
(By Months)

	1948 Pounds	1949 Pounds	% Increase - Decrease
January	164,993	122,149	- 26.0
February	163,211	111,226	- 31.9
March	208,931	147,965	- 29.2
April	189,332	206,076	x 8.8
May	229,957	301,122	x 30.9
June	370,091	377,768	x 2.1
July	363,613	345,829	- 4.9
August	312,985	334,479	x 6.9
September	219,887	286,658	x 30.4
October	149,815	223,855	x 49.4
November	87,575	159,644	x 82.3
December	105,613	164,112	x 55.4
	2,566,003	2,780,883	x 8.4

ESTIMATED SPECIAL GRADE BUTTERFAT PRICES
(F.O.B. SHIPPING POINT)
(By Months)

	1949		1948		1947		1946	
	Cents	%	Cents	%	Cents	%	Cents	%
January	69.75	(4.6)	69.9	(4.6)	38.5	(4.0)	33.10	(4.9)
February	69.75	(4.6)	69.9	(4.6)	38.5	(4.3)	33.10	(5.2)
March	63.45	(5.3)	69.9	(5.6)	38.5	(5.3)	33.10	(5.7)
April	59.0	(6.6)	69.9	(6.7)	38.5	(6.5)	33.10	(7.1)
May	58.75	(10.0)	69.9	(9.3)	50.0	(10.2)	37.10	(11.1)
June	58.75	(13.4)	69.2	(14.4)	50.6	(14.6)	36.10	(15.8)
July	58.75	(13.8)	69.9	(14.5)	52.9	(14.6)	36.85	(16.0)
August	58.75	(12.9)	69.9	(13.3)	56.9	(12.7)	33.10	(13.8)
September	59.75	(10.4)	69.9	(9.9)	62.4	(10.3)	33.10	(5.0)
October	59.75	(7.7)	69.9	(7.3)	61.65	(7.4)	33.10	(6.5)
November	60.75	(6.0)	69.9	(5.4)	62.25	(5.3)	33.10	(4.9)
December	60.75	(4.7)	69.9	(4.4)	68.25	(4.3)	33.10	(4.0)
The Year	60.79	(100.0)	69.79	(100.0)	51.53	(100.0)	36.51	(100.0)

The estimated average prices paid for Special Grade butterfat during 1946 and 1947 do not include the Dominion Government Subsidy.

During 1946 and up to April 30th, 1947, a subsidy of 10¢ per pound butterfat was in effect.

NOTE: The figures enclosed in brackets represent the monthly percentages of the cream receipts for the year.

TOTAL VALUE OF DAIRY PRODUCTS
(By Years)

Year			Year	
1900	\$ 546,476		1935	\$14,252,500
1906	2,000,000		1940	19,532,344
1910	7,855,761		1945	34,588,305
1915	15,896,586		1946	36,900,000
1920	34,000,000		1947	46,811,000
1925	23,002,000		1948	56,755,000
1930	18,675,500		1949 Preliminary.....	52,560,000

TOTAL COWS FOR MILK PURPOSES

Year	Cows	Year	Cows
1901	46,101	1936	458,200
1906	101,235	1940	416,800
1911	147,687	1945	376,400
1916	277,324	1946	326,200
1921	432,838	1947	315,900
1926	436,500	1948	327,000
1931	385,000	1949	315,000

STATISTICAL DATA RELATING TO MILK CONTROL
Submitted by
THE BOARD OF PUBLIC UTILITY COMMISSIONERS
(A. T. Neale, Administrator of Milk Control)

The tables which follow relate to milk and cream supplied and sold for fluid consumption in the areas of the Province controlled by the Board of Public Utility Commissioners during the year 1949.

TABLE 1.
PER CAPITA CONSUMPTION OF FLUID MILK, IN PINTS, MONTHLY FOR 1949
(To Include Cream Consumption Converted to Milk Equivalent.)
PINTS (PER DIEM)

Area	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	.96	1.00	1.03	.99	.99	1.02	.97	.95	.98	.99	1.02	1.01
Camrose	.93	1.03	.99	.99	.92	.95	.86	.93	.97	.97	1.00	.96
Crow's Nest Pass..	.44	.43	.49	.50	.48	.51	.48	.47	.49	.51	.52	.51
Edmonton	1.00	1.05	1.07	1.09	1.01	1.06	1.00	1.02	1.05	1.08	1.11	1.11
Lethbridge	.81	.87	.89	.89	.83	.90	.83	.88	.90	.90	.92	.93
Medicine Hat	.74	.74	.78	.76	.76	.79	.76	.76	.79	.79	.79	.79
Ponoka	.99	1.05	1.09	1.10	1.05	1.21	1.00	1.61	1.15	1.10	1.08	1.10
Red Deer	1.06	1.08	1.15	1.10	1.05	1.11	1.14	1.09	1.13	1.12	1.12	1.14

TABLE 2
CONSUMPTION OF FLUID MILK MONTHLY, 1949, IN QUARTS

Area	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary ..	1,203,091	1,135,563	1,281,632	1,206,170	1,241,774	1,213,247	1,139,170	1,204,750	1,196,822	1,244,582	1,241,333	1,238,685
Camrose ..	45,451	45,091	49,934	47,178	45,681	44,789	42,034	45,903	45,592	40,852	47,259	48,834
Crow's Nest Pass	58,226	52,703	63,187	62,144	61,574	61,423	59,212	61,617	60,764	63,052	63,628	61,829
Edmonton ..	1,508,134	1,431,520	1,624,675	1,596,411	1,557,928	1,536,785	1,495,657	1,533,231	1,540,853	1,618,987	1,620,970	1,675,002
Lethbridge ...	191,734	186,958	209,810	208,543	204,156	202,472	195,140	213,086	208,011	208,792	208,718	212,253
Medicine Hat ..	127,017	121,286	134,233	128,034	134,303	133,385	130,694	132,505	131,266	133,995	139,762	131,663
Ponoka	20,215	19,572	21,775	21,909	21,503	22,740	20,143	21,557	21,753	22,492	21,753	22,248
Red Deer	66,786	62,289	69,286	66,789	66,649	67,215	71,164	68,486	71,455	70,776	68,458	71,109

TABLE 3
CONSUMPTION OF FLUID CREAM MONTHLY, 1949 IN QUARTS

Area	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary ..	116,157	104,132	121,674	112,723	113,298	115,516	118,245	108,884	109,958	116,625	116,351	126,551
Camrose	1,828	1,924	1,811	1,898	1,808	1,858	1,766	1,923	1,939	2,113	1,997	2,064
Crow's Nest ..	.....	50	118	254	209	313	351	.....	210	297	255	553
Edmonton ..	132,128	125,878	139,742	136,882	128,498	134,837	135,136	134,248	134,277	147,514	143,657	148,446
Lethbridge ..	16,049	15,840	17,647	16,784	15,960	17,189	16,331	16,596	17,686	19,011	18,571	19,912
Medicine Hat ..	7,826	7,142	7,783	7,240	6,937	7,470	7,844	7,063	7,726	8,552	8,188	8,587
Ponoka	1,158	1,107	1,335	1,298	1,235	1,517	1,219	1,204	1,437	1,294	1,155	1,325
Red Deer ..	2,548	2,186	2,945	2,529	2,460	2,614	2,789	2,570	2,290	2,633	2,512	2,790

TABLE 4
CONSUMPTION OF CHOCOLATE DAIRY DRINK MONTHLY, 1949 IN QUARTS

Area	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary ..	20,880	21,645	25,602	25,862	32,846	34,589	38,621	39,795	33,023	26,216	26,744	27,635
Camrose ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crow's Nest ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edmonton ..	28,972	29,123	37,670	42,617	49,384	54,217	61,615	62,378	52,865	42,556	42,242	43,650
Lethbridge ..	3,478	3,066	4,122	4,918	6,475	7,310	7,960	9,979	8,427	5,355	3,618	3,358
Medicine Hat ..	3,871	3,843	4,677	4,560	5,531	6,071	6,905	7,193	5,636	4,845	4,640	4,343
Ponoka ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Red Deer ..	292	210	267	287	808	972	947	752	972	459	654	676

TABLE 5
CONSUMPTION OF BUTTERMILK MONTHLY, 1949--IN QUARTS

Area	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary ..	12,169	12,673	16,172	16,567	19,981	17,932	21,072	23,477	17,724	14,126	14,230	14,704
Camrose ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crow's Nest ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edmonton ..	14,159	14,261	22,103	23,063	356	541	363	216	114	17,777	17,989	18,539
Lethbridge ..	1,251	1,368	1,617	1,711	2,087	3,450	2,309	3,233	2,128	1,886	1,508	1,929
Medicine Hat ..	1,500	579	649	790	1,008	1,168	1,305	1,323	780	652	599	421
Ponoka ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Red Deer ..	18	4	8	21	53	55	74	92	86	73	78	81

DEPARTMENT OF AGRICULTURE

TABLE 6
FLUID MILK CONSUMPTION, 1945-1949—IN QUARTS

Area	1945	1946	1947	1948	1949
Calgary	14,718,119	15,138,343	14,437,081	13,910,727	14,602,149
Camrose	NO RECORD			498,817	547,698
Crow's Nest Pass	NO RECORD			741,929	729,359
Edmonton	17,046,833	18,515,522	17,575,803	17,287,723	18,740,153
Lethbridge	2,333,010	2,806,947	2,422,713	2,357,966	2,444,563
Medicine Hat	NO RECORD		1,776,904	1,771,824	1,568,148
Ponoka	NO RECORD			248,739	257,290
Red Deer	606,001	755,730	761,967	772,833	820,462
Totals	34,703,963	37,216,542	36,974,468	37,590,558	39,709,822

TABLE 7
FLUID CREAM CONSUMPTION, 1945-1949—IN QUARTS

Area	1945	1946	1947	1948	1949
Calgary	1,315,726	1,519,581	1,600,813	1,417,539	1,380,214
Camrose	NO RECORD			20,433	22,929
Crow's Nest Pass	NO RECORD			1,573	2,616
Edmonton	1,478,393	1,632,854	1,710,999	1,537,893	1,640,743
Lethbridge	159,958	184,753	208,730	191,806	207,576
Medicine Hat	NO RECORD		96,473	95,788	92,358
Ponoka	NO RECORD			13,555	15,214
Red Deer	NO RECORD			37,719	30,866
Totals in Qts.	2,954,077	3,337,188	3,617,015	3,316,306	3,392,516
Totals in B.F. Equivalent lbs. ...	759,458	837,013	1,401,535	995,161	1,028,445

TABLE 8
FLUID MILK PURCHASES BY DISTRIBUTING PLANTS, 1945-1949—IN POUNDS

Area	1945	1946	1947	1948	1949
Calgary	46,982,078	48,220,977	47,943,162	44,746,741	48,277,972
Camrose	NO RECORD			1,326,321	1,555,293
Crow's Nest Pass	NO RECORD			1,393,870	1,166,023
Edmonton	43,673,442	51,149,051	51,191,446	52,369,056	54,684,765
Lethbridge	*9,534,137	6,724,565	7,016,653	6,624,628	6,730,570
Medicine Hat	NO RECORD		4,626,413	4,593,004	4,760,167
Ponoka	NO RECORD			699,388	790,910
Red Deer	3,563,992	4,319,322	4,061,350	3,195,454	3,333,969
Totals (lbs.)	103,753,649	110,413,915	114,839,024	114,948,462	121,299,669

*Includes Milk for Military Personnel.

TABLE 9
SUMMARY OF MILK AND CREAM PRODUCERS AND DISTRIBUTORS OPERATING ON
DECEMBER 31, 1949 UNDER BOARD OF PUBLIC UTILITY COMMISSIONERS LICENSE

Area	Milk		Cream		Total	
	Producers	Distributors	Producers	Distributors	Producers	Distributors
Bowden	1	1	...	...	1	1
Calgary	249	5	33	2	282	7
Camrose	3	2	...	...	8	2
Crow's Nest Pass	13	1	...	...	13	1
Edmonton	322	6	34	...	356	6
Lethbridge	31	2	...	...	31	2
Medicine Hat	41	5	...	...	41	5
Ponoka	4	1	1	...	5	1
Red Deer	15	2	11	...	26	2
Totals	634	25	79	2	763	27

TABLE 10

MILK AND CREAM PRICES AS EFFECTIVE DECEMBER 31st, 1949

Area	MILK		CREAM			MILK PRODUCTS	
	To Pro- ducers Per 100 lbs. 3.5% B.F.	To Con- sumers Per Qt.	10% Sub- standard Per Pint	18% Table Per Pt.	32-34% Whipping Per ½ Pt.	Chocolate Drink Per Qt.	Butter- milk Per Qt.
	\$	c	c	c	c	c	c
Bowden	4.08	17	....	....	25	....	....
Calgary	4.25	18	22	38	29	19	17
Camrose	3.91	16	20	35	27	18	15
Crow's Nest Pass	4.87	21	....	....	30	21	21
Edmonton	4.25	17	22	38	29	18	16
Lethbridge	4.25	18	22	38	29	19	17
Ponoka	3.91	16	20	35	27	18	16
Red Deer	4.18	17	22	38	29	19	....
Medicine Hat	4.25	18	22	38	29	19	17

TABLE 11

COMPARISON OF PURCHASE AND RE-SALE PRICES OF MILK AND MILK PRODUCTS
AS EFFECTIVE DECEMBER 31st, 1949

Province	City	PURCHASE PRICE		RETAIL SALE PRICE			
		Per 100 lbs. Basis 3.5% B.F.	Milk Per Qt.	Cream Sub- standard Per Pt.	Butter- milk Per Qt.	Chocolate Dairy Drink Per Qt.	
		\$	c	c	c	c	c
British Columbia	Vancouver	3.95	17	20	15	18	
Alberta	Edmonton	4.25	17	22	16	18	
Saskatchewan	Regina	4.15	18	20	17	19	
Manitoba	Winnipeg	3.90	17	20	12	18	

REPORT OF THE POULTRY BRANCH

(F. J. Higginson—Acting Poultry Commissioner)

Inspectors:

E. R. Nicholls	- - - -	Calgary
W. G. Hunsaker	- - - -	Red Deer
E. E. Kitchen	- - - -	East Edmonton
K. G. E. Wade	- - - -	West Edmonton
W. E. Hughes	- - - -	Mgr. Provincial Poultry Plant

GENERAL REVIEW

The situation facing the poultry industry at the conclusion of the 1949 season looks very grave. While the loss of the British contract had been half expected our producers were still hopeful that perhaps some arrangements could and would be made whereby Great Britain would continue to purchase our eggs. The sudden announcement of the termination of the British contract, together with the announcement from Ottawa that they did not intend to establish any floor price for eggs, has caused some consternation among poultry producers who are wondering why poultry should not receive the same price support as have other agricultural products in order to stabilize the industry at least temporarily. With the 1950 hatching season about to commence it is necessary for flock owners to make arrangements for their pullet replacements for the coming year and the unstable situation that now exists could result in fewer chick sales and fewer pullets being reared, which could create a definite shortage of fresh eggs for the 1950 season. However, at the present time there does not seem to be any undue activity regarding the liquidation of Alberta flocks. In spite of this serious situation a certain amount of optimism prevails and all who are interested in the industry are working together and trying to make the very best out of these existing conditions. Feed prices are still very high, higher than they have been for many years and with the very short crop over most of Alberta last year it looks as if the prospects for lower feed prices are rather remote, at least until another crop is in sight. Production costs must be reduced and this can be done only by heavier culling of the flocks and better feeding and management practices. However, there is the possibility of considerable industrial development within our province in the future and with our potential market to the north there is no doubt our consuming centres will be greatly enlarged and our domestic market further developed.

We do not anticipate any drastic reduction in the poultry industry at the present time. However, we do expect a few will dispose of their flocks but these will be mostly marginal producers who never are any asset to the industry. This action on the part of these flock owners will also have its effect on the surplus.

CHICKENS

There has been a marked increase in chick production in 1949 over 1948. There also has been a very definite improve-

ment in hatchability as the following tables will indicate. It must be assumed that the general improvement in breeding, feeding, general management practices together with better hatchery management must all be taken into consideration for this increase in hatchability.

This season a program of hatchery sanitation was undertaken by the Department of Veterinary Services in co-operation with the hatcherymen, the results of which have given us very valuable information in regard to this important matter.

PRODUCTION OF CHICKS

	1948	1949
Hatched in Breeder Hatcheries	208,654	239,119
Hatched in Commercial Hatcheries	6,056,968	6,356,501
Total Chicks Hatched	6,265,622	6,595,620
Increase in Chick Production over 1948—5.2 %		

HATCHABILITY

	1948	1949
All Approved Hatcheries (Average)	65.5 %	67.8 %

	1948	1949
Hatching Egg Imported Into Alberta		1,702,863

CHICKS IMPORTED INTO ALBERTA

	1948	1949
British Columbia	649,622	1,120,041
Saskatchewan	105,107	146,712
Manitoba	107,235	186,910
Ontario		19,859
Maritimes		565
	861,964	1,474,087

Increase in Imported Chicks—71 %

CHICKS EXPORTED FROM ALBERTA

	1948	1949
British Columbia	39,087	78,085
Saskatchewan	11,324	58,612
Manitoba	225	4,177
N.W.T.		200
Yukon Territory		1,240
	50,636	142,314

Increase in Exported Chicks—181 %

CHICKS DESTROYED BY APPROVED HATCHERIES IN ALBERTA DURING 1949 HATCHING SEASON

	1948	1949
Light Cockerels	459,774	324,020
Heavy Cockerels	74,845	8,261
Mixed Chicks	33,131	3,264
Pullets	200	
	567,950	335,545

Decrease in Chicks Destroyed—40.9 %

Total Production of Chicks in Alberta.		
From Alberta Flocks	5,441,079	
From Eggs Imported	1,154,541	6,595,620
Chicks Imported		1,474,087
		8,069,707
Less—Chicks Exported	142,314	
Chicks Destroyed	335,545	477,859
Chicks Remaining in Province		7,591,848

EGG PRODUCTION

There has been a slight decrease in the volume of eggs produced in 1949 over 1948 but a decided increase in quality. Quality is a factor that has been stressed continuously, pointing out to producers the necessity of quality in their business. Perhaps one of the contributing factors, it could be assumed, was the result of a series of field days that were held last year jointly by the Dominion and Provincial poultry officials. These field days consisted of culling demonstrations, discussions and information on flock management, feeding methods, detection of the common diseases and the importance of the care of eggs on the farm and in transit to market. The Provincial officials were responsible for all matters pertaining to production and Dominion officials took care of matters pertaining to marketing. These meetings were well attended and through them it was possible to contact large numbers of producers whom cannot be met in any other way. The domestic market was strong especially through the fall months and prices reached an all-time high, so high that it appeared consumer resistance might develop. However, with the reduction in the price of eggs, and with the campaign that is being contemplated to place the food value of an egg before the public, it is expected that consumption will be greatly increased.

LIVE AND DRESSED POULTRY

The situation in regard to live and dressed poultry at present is much the same as last year. There was a very large carry over of dressed poultry from 1947 to 1948 but this was greatly reduced at the time the duty on dressed poultry going to the United States was discontinued. As long as red meat remains high in price there will always be a fairly strong demand for poultry meat. Heavy weight cockerel chicks and turkey poults were in heavy demand resulting in an over 40% decrease in the number of cockerel chicks destroyed in 1949 as compared with 1948.

EXPORT MARKETS

It appears that every effort must be made to explore and develop any possible future markets. Fortunately in the past Alberta's product has gained an enviable reputation for quality and it is hoped that this reputation will be beneficial and helpful when contacting future buyers of our product.

WHOLESALE POULTRY PREMISES

All wholesale poultry premises in Alberta operate under Dominion permit and registration and Provincial licensing. Administration of regulations pertaining to these stations comes under Dominion supervision. The general improvement that has been shown in wholesale poultry premises and the definite improvement in handling facilities could no doubt be one of the reasons for the general improvement and increase in quality throughout the province during the past season with Alberta

second to none in Canada. Officials also made a point of visiting all grading stations throughout the province and assisted them in every way possible in an effort to improve the quality of the product they were handling. The following data is supplied by Dominion officials:

TOTAL NUMBER OF STATIONS OPERATING IN ALBERTA

Year	Fully Registered	Tentative Registration	Total Operating
1944	—	—	160
1945	—	—	183
1946	177	12	189
1947	168	17	185
1948	167	3	170
1949	163	3	166

STATION RATINGS SHOWING PERCENTAGE OF THE WHOLE

Year	Out-standing	%	Good	%	Fair	%	Poor	%	Not Rated	%
1944	16	10	78	48	66	42	—	—	—	—
1945	18	10	81	43	58	31	28	15	3	1
1946	32	17	91	48	40	21	17	8	9	5
1947	42	23	82	45	38	20	13	7	10	5
1948	62	36	81	48	19	11	6	4	2	1
1949	45	27	98	59	18	11	4	2.5	1	.5

METHOD OF TEMPERATURE CONTROL USED IN STATIONS

Year	Mechanical Refrigeration	Ice Cooling	Basement	Water Cooling	None
1944	93 - 59%	55 - 36%	10 - 4%	2 - 1%	—
1945	122 - 65%	41 - 21%	12 - 7%	2 - 1%	11 - 6%
1946	127 - 70%	31 - 17%	12 - 7%	2 - 1%	8 - 4%
1947	138 - 78%	22 - 13%	10 - 6%	2 - 1%	3 - 2%
1948	143 - 85%	16 - 9.5%	8 - 5%	—	1 - .5%
1949	153 - 92%	5 - 3%	4 - .25%	—	4 - .25%

TABLE SHOWING DIVISION OF STATIONS IN VARIOUS TYPES OF OWNERSHIP

Year	Co-operatives	Wholesalers	Privately Owned
1944	77 - 48%	51 - 32%	32 - 20%
1945	99 - 52%	34 - 19%	55 - 29%
1946	93 - 49%	56 - 30%	40 - 21%
1947	86 - 47%	54 - 29%	45 - 24%
1948	79 - 46%	59 - 35%	32 - 19%
1949	78 - 47%	49 - 30%	39 - 23%

CHICKEN APPROVAL AND BANDING POLICY

The 1948-49 hatching season showed a slight decrease in the number of approved flocks and in order to take care of the requirements for chicks it was necessary to import large numbers of eggs and chicks from other provinces. However, for the 1949-50 season every effort was made for Alberta to become more self-sufficient in her hatching egg supply and indications are that this goal will be reached by the increased number of flock owners applying for approval.

TABLE 1

Year	Method of Testing	No. of Flocks	No. of Birds	% Reaction
1930-31	Tube Agglutination	148	18,608	20.2
1931-32	"	232	31,177	12.9
1932-33	"	188	26,381	8.6
1933-34	"	205	33,295	7.3
1934-35	"	645	104,858	11.2
1935-36	"	615	94,536	5.5
1936-37	"	815	136,228	5.5
1937-38	"	677	108,908	4.8
1938-39	"	534	92,355	4.51
1939-40	Whole Blood	437	80,927	5.1
1940-41	"	412	91,868	2.6
1941-42	"	510	120,198	2.12
1942-43	"	460	120,841	0.35
1943-44	"	664	165,903	0.716
1944-45	"	694	198,877	0.736
1945-46	"	632	186,992	0.798
1946-47	"	792	248,666	0.526
1947-48	"	862	276,716	0.645
1948-49	"	705	231,255	0.234

NOTE: The above reaction is on the first test. Some provinces show a lower reaction, but these are on the final tests where over 2% reaction required a second and sometimes third and fourth re-tests.

During the early part of 1949 some twenty meetings were held in various parts of the province for the purpose of placing before Alberta poultry producers and hatcherymen for their consideration THE NEW PROPOSED CONTROLLED POULTRY BREEDING PROGRAM. This plan, which is entirely voluntary, has been received very favorably by all concerned and quite a number of the hatcherymen are adopting it for the 1949-50 season. There is every reason to believe that this will be an important factor in the production of a higher quality Alberta bred chick. The Poultry Branch is assisting to the fullest extent in acquiring males from the various strains which the hatcherymen need for this program.

The officials are also encouraging the better R.O.P. breeders to further develop their flocks in order that a sufficient supply of R.O.P. males will be available for the Alberta key flocks under this plan.

Maximum results can better be accomplished by Provincial administration of hatchery approval regulations and the approval and banding policy.

TURKEY APPROVAL AND BANDING POLICY

There has been a tremendous change and development in the turkey industry. The small farm flocks of breeding turkeys are fast disappearing and turkey breeding flocks are being concentrated on specialized production farms. The value and advantage of day-old poults is being appreciated by all turkey growers who are able to purchase their requirements from the hatcheries in any numbers, with the knowledge that the poults are hatched only from eggs from flocks that have been carefully selected, approved and blood tested. This program also is having a decided effect on the quality and uniformity of the commercial pack of turkeys in the fall. This season the demand for poults was very heavy and in order to supply this demand it was necessary to import both large numbers of eggs and poults. The increase in turkeys hatched over 1948 in the province was 85.32%. For a number of years now the importance of becoming self-sufficient in turkey egg supply in Alberta has been

stressed. The large amounts of money sent out each year for eggs and poults should be kept at home. With this thought in mind the banding and approval of more turkey hens this year has been encouraged. The breeders have co-operated and this will result in many thousands more turkey hens being banded this year for egg production than in previous years. It is felt that this will not only eliminate to a certain degree the menace of disease, but will effect control and supervision of the flocks producing the eggs for the commercial poultry industry.

The turkey market was not quite as attractive as in 1948 although prices for the desirable weight birds were fairly satisfactory. Oversize birds were heavily discounted in price as the market could not absorb a very large per cent of these heavy birds being offered. For years reduced weights have been advocated. Many turkey breeders have been somewhat indifferent to these suggestions regarding the production of smaller birds. However, in the selection of our approved breeding flocks this season the keeping down of weights as far as reasonably possible has been attempted.

This season, for the first time, only one grade of turkey was banded, Grade A, stressing in the selection of these birds market type and requirements. In order that outstanding birds could be identified by the breeder they were marked with a plain green band.

HATCHERY APPROVAL REGULATIONS

These regulations are administered by the Dominion inspectors. Chick sales have slightly increased over 1948.

Table II shows the development of hatcheries and chick sales since 1936.

TABLE 2

Year	Egg Setting Capacity	% of 1936	Chicks Hatched	% of 1936
1936	924,300	—	1,028,881	—
1937	1,036,526	112.1	1,068,056	103.8
1938	1,033,906	111.9	1,171,082	113.8
1939	1,052,759	113.9	1,394,194	135.5
1940	1,203,368	130.2	1,538,597	149.7
1941	1,269,117	137.3	1,938,052	188.4
1942	1,407,280	151.2	2,631,468	255.8
1943	1,408,070	152.3	3,607,372	350.6
1944	2,102,434	223.1	5,476,476	532.3
1945	2,208,938	238.9	4,917,366	477.9
1946	2,445,750	264.6	5,711,423	555.1
1947	3,404,773	390.0	7,452,785	724.3
1948	3,638,704	393.7	6,265,620	608.9
1949	3,736,510	404.2	6,595,620	641.0

The inspectors of this department approve and supervise all flocks supplying hatching eggs and render service whenever requested on all problems pertaining to chicks and poults.

TORONTO ROYAL WINTER FAIR

The 1949 exhibit to the Royal Winter Fair was very small.

ALBERTA WINNINGS TORONTO ROYAL WINTER FAIR, 1949 POULTRY

	1st	2nd	3rd	4th	5th	6th
Poultry	1	1	3	....	1	....
Turkeys	....	..	....	..	....	2

PROVINCIAL POULTRY PLANT

To better accommodate a very high standard flock of R.O.P. S.C. White Leghorns kept at this farm a new laying house, 80'x26', was built which will house about 700 laying birds. Considerable experimental work in the use of deep litter is being done. It has been the practice each year to rear about 100 Barred Plymouth Rock, New Hampshire, and Light Sussex chicks. These birds are used for class work when the blood test staff are assembled each fall prior to commencing flock approval work. In this manner agreement is reached on uniformity of selection and grading which has proven very beneficial on flock approval work.

A very large percentage of the S.C. White Leghorn flocks in the province of Alberta are headed by pedigree males that have been bred at the Provincial Poultry Plant.



Note: This is the new poultry laying house at the Provincial Poultry Plant which is housing 700 Leghorns at the present time.

TABLE 3

R.O.P. 1945-1949 Entry—

Birds entered	433	
Birds certified	297	68.5%
Average production—181 eggs *		
Average egg weight—25 ozs.		
Dead and culled	67	15.3%
Progeny Test—		
Males Passed	4	
Females Passed	25	

* Please note trapping period was reduced this year to 305 days.

NOTE: Unfortunately about 70 birds were stolen from the flock with the result that many families were depleted to the point where they were no longer eligible for progeny testing.

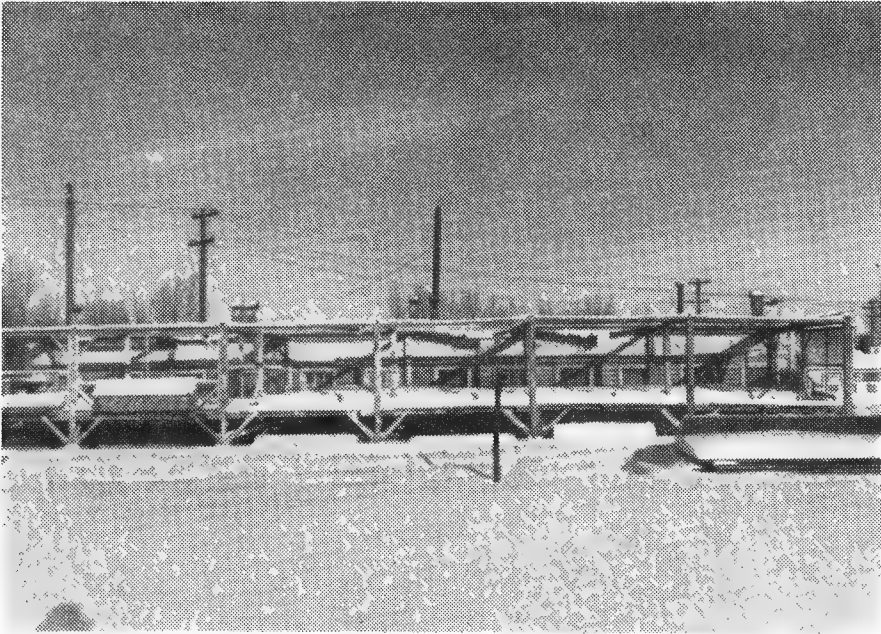
A summarization of hatching and sales of Leghorn stock is shown in Table IV.

TABLE 4

Hatched—			
S.C.W.L.	R.O.P. Pedigree Chicks	11,331	
	Hatchery Approved	1,236	
	Custom (U. of A.)	2,965	
	Total		15,532
Sold—			
	R.O.P. Cockerel Chicks	2,948	
	Pullet Chicks	3,151	
	Total		6,099
	Mature Males	355	
	Mature Females	1,000	
	Total		1,355
	Hatching Eggs	9,000	

For several years an attempt has been made, by careful selection, to reduce the size of the Bronze turkeys in accordance with the more desirable weights recommended by the trade. In this respect success has been achieved. The project necessitated the rearing of a fairly large flock of turkeys for two or three years so that sufficient numbers were available from which to make these selections. The results have been extremely gratifying, as this year it was possible to select for the 1950 breeding season the required number of hens and toms of this very desirable size and weight. This year the average weight of the toms marketed was 19.5 pounds and the average weight of the hens was 12.5 pounds. As the demand for adult breeding stock has been very limited for the past two years the only way this stock can be distributed would be by the sale of eggs and poults. Unfortunately, there is not sufficient accommodation to carry on this work. In view of this development the size of the breeding flock was reduced considerably this year. After selecting some 200 breeding birds the balance of the flock was disposed of through the usual commercial market channels. These birds, as it could be understood, were the rejects of the entire flock and graded 61% Grade A.

For the past three years experiments have been carried on with the use of verandahs for the confinement rearing of turkeys. The first year wire floors were used and it was found that they were not at all satisfactory. The next year one-inch slatted floors were used, but this season two-inch slatted floors with one-inch spacing was tried. This latter type of verandah was found very satisfactory and one crop of poults was raised to maturity on these verandahs. To obtain the best results the use of verandahs for about twelve weeks is very desirable. After that time if good green range is available birds reared to maturity in this manner is a very satisfactory arrangement. There are, of course, some advantages to verandah rearing. These advantages are disease control and no loss from predatory animals, although the cost of production, as could be expected, is a little higher than birds reared on the range.



NOTE: The above is a picture taken this winter showing verandahs used for confinement rearing of turkeys at the Provincial Poultry Plant. These verandahs, as it will be noticed, are on skids and can be moved from one place to another.

As usual a large number of visitors came to the Poultry Plant, mostly people interested in chickens and turkeys. They were shown about the premises by members of the staff, who described the buildings, equipment, feeding, management, range rotation, and answered questions on other poultry matters. The splendid picnic grounds at the Plant were used not only by agricultural groups but by commercial firms and also by many individual family groups.

REPORT OF AGRICULTURAL EXTENSION SERVICE

F. H. Newcombe - - Director, Extension Service
S. S. Graham - - - Supervisor of District Agriculturists
Mrs. V. G. Macdonald - Supervisor, Home Economics Service
Miss B. J. Lewis - - Nutrition Specialist
Miss C. Judson - - - Home Designing Specialist
C. A. Cheshire - - - Agricultural Engineer
E. B. Swindlehurst - - Extension Editor
R. E. English - - - Supervisor, Agricultural Information

GENERAL

The fundamental aims and objectives of Agricultural Extension do not change from year to year, nor in a general way does the demand for assistance toward those aims and objectives. The conditions which produce either bumper or small crops both are accompanied by day-to-day problems of husbandry.

Prices which have prevailed for cereal crops during 1949 are still relatively high and this level of prices does not, in the main, induce those farm practices which we believe to be best and most permanent. A fear has been more or less prevalent throughout agriculture during the past year that the industry might have reached a zenith of prices and that it may be necessary to look forward to somewhat reduced levels. If the reduction should not be too great, nor too sudden, it is believed that it might be productive of an attitude of mind which would make it easier for extension workers to recommend long term programmes.

Not many staff changes have to be recorded this year. S. S. Graham, formerly District Agriculturist at Lethbridge, has assumed the duties of Supervisor, District Agriculturist Service. Following the resignation of E. B. Martin at the end of 1948, Mr. C. A. Cheshire was appointed Agricultural Engineer in his place. Mr. Cheshire joined the Department in April of this year. Miss M. Fraser, while she retains office accommodation in this Branch, is now under supervision of the Superintendent of Agricultural Schools.

One new District Agriculturist office was opened at Evansburg and is in charge of A. A. Campbell. As at the end of the year two District Agriculturist offices are vacant by reason of resignations from the Service. Successors have not yet been appointed. The number of District Agriculturist offices is now, therefore, 36.

A District Home Economist has been appointed with headquarters at Ryley, bringing the total number of these offices at the present time to 13. The demand for technically trained personnel in this field somewhat exceeds the supply, and it is possible that some difficulty may be experienced in filling the positions which we anticipate will be made by resignation.

Extension Service has continued to enjoy the co-operation and assistance of many organizations and individuals, and for the assistance rendered the Service is very appreciative.

STATISTICS

The compilation of agricultural statistics has proceeded as in former years. Releases are made from time to time and specific figures are made available to inquirers. This service is being increasingly patronized by many people in industrial and commercial enterprises.

The statistics service does not receive returns direct from correspondents in the country, but the figures are compiled from and in conjunction with the Dominion Bureau of Statistics.

PUBLICATIONS

There may be some room for debate as to the "change of behavior" which results from the reading of bulletins, but the fact that they are being increasingly used is not debatable. The total number of bulletins, leaflets, pamphlets, etc., distributed during 1949 is estimated at 275,000.

The publications which were printed or reprinted during this year are indicated hereunder.

Circular 5—The Use of Fertilizer in Alberta (reprint).

Circular 7—Creeping Red Fescue (revised).

Leaflet 28—Tuberculosis of Poultry (revised).

Leaflet 56—Brooding and Rearing of Chick and Poult (reprint).

Circular 63—Hay and Pasture Crops for Alberta (revised).

Circular 76—Control of Canada Thistle and Sow Thistle (revised).

Circular 79—Grass and Legume Seed Crops.

Bulletin 83—Weed Control with 2,4-D (revised).

Bulletin 84—Bang's Disease (reprint).

Bulletin 85—Baits, Sprays and Dusts for Grasshopper Control.

Joint Series No. 6—One-way Disc Maintenance and Operation (revised).

Weeds and Canadian Agriculture (purchased).

Plans—Poultry Brooder House Plans.

Oat Hull Separator.

AGRICULTURAL SOCIETIES

Agricultural Fairs were held during 1949 by Agricultural Societies and Exhibition Associations as shown below.

Class "A" Fairs—Calgary, Edmonton.

Class "B" Fairs—Camrose, Lethbridge, Lloydminster, Red Deer, Vegreville, Vermilion.

Class "C" Fairs—Benalto, Didsbury, Donnelly-Falher-Girouxville, Goose Creek, Lamont, Lousana, Medicine Hat, Olds, Priddis-Millarville, St. Paul, Westlock, Wildwood, Willingdon, Wetaskiwin.

Fairs were also held in the following communities, but not by Societies incorporated under The Agricultural Societies Act: Darwell, Grande Centre, Wetaskiwin.

Among "B" Class fairs continued use has been made of the financial assistance provided by the Dominion Department of Agriculture for development in accommodation. Some "C" Class fairs also have made appreciable improvements in grounds and buildings. In addition to fairs, 19 tillage competitions, 1 farm and home improvement competition, 3 livestock shows and sales, and 2 junior inter-club competitions were held under the auspices of Agricultural Societies.

FARM LABOUR

The Dominion-Provincial Farm Labour Committee has continued to function under the provisions of the Agreement between the Provincial and National Governments.

A tendency toward some reduction in wages has been apparent, particularly toward the end of the year. Contract wages for sugar beet workers were unchanged.

(1) Displaced Persons. The number of Displaced Persons brought into the province during 1949 is reflected in the figures given hereunder.

	Placed	Souls
D.P. Single Males	65	65
D.P. Married Couples	21	45
D.P. Female Domestics	25	25
D.P. Beet Workers (Family Groups)	185	997
	296	1,132
Corresponding totals for 1948 were	242	920

As in former years, it would have been desirable had the beet workers arrived rather earlier, but there has been no general difficulty of placements in this work. The only difficulties encountered with respect to sugar beet workers have been fall placement for those who left the industry on completion of the beet season.

In general it may be recorded that the Displaced Persons have proved satisfactory as farm workers, even though a small percentage have not remained in agriculture for one year as agreed. In some cases the employer has been responsible also for their leaving agriculture.

Under the auspices of the Canadian Mennonite Board of Colonization 7 families, 8 domestics, 9 single males, representing a total of 31 adults, and 12 children were placed on farms in this province. Under the sponsorship of the Canadian Lutheran World Relief 11 families, 4 domestics, 6 single males, comprising 32 adults, and 18 children were brought to this province.

(2) Western Farm Workers. The demand from Ontario for assistance in harvesting was somewhat reduced from last year. This province dispatched 304 workers to Ontario.

(3) Eastern Harvesters. Owing to the much smaller crop this year than for some years previous, only 430 harvesters were brought into the province from eastern points, which is slightly less than half the number required last year.

(4) B.C. Fruit Pickers. Early advices indicated that pickers from the prairie would not be required in 1949. Warm weather, however, altered these prospects and caused rapid ripening of fruit. On urgent call from B.C. 59 girls and women were dispatched to that province during the ten days between the demand and the cancellation of the movement.

(5) The field staff of this Branch has in the aggregate been responsible for placement of:

Alberta Harvesters	1,043
General Farm Help	854
Displaced Persons (placed and transferred)	582
Displaced Persons (investigations)	1,147
Other Immigrants	44
Farm Domestics (including D.P.'s)	131

MASTER FARM FAMILY PROGRAM

Announced this year in the Speech from the Throne, the Master Farm Family Programme has been conducted throughout the province for the first time under the auspices of this Department. A similar programme was conducted some years ago by the farm journal, the Nor'-West Farmer, but was discontinued after some three or four years of operation.

The objects of this Programme are two-fold: first to give official recognition to farm families who have made outstanding contributions to agriculture and to the communities in which they live, and secondly by affixing this stamp of official approval to stimulate other farm families to make similar contributions. In other words, it is believed that it is desirable to say "Well done" to farm families who are making an outstanding success of farming and who give of their time and talent to the improvement of community life, and that this would encourage others to emulate of their example.

The regulations provide that a family must be nominated for this honor by three farmers in the community, and that the nominee must accept the nomination.

The unit of selection was the territory of a District Agriculturist. Following the close of nominations, each nominee was visited by a committee comprising the District Agriculturist, the District Home Economist, one farmer and one farm housewife. The duty of this committee was not to name winners but to eliminate all but the three highest scoring nominees. The total number of families nominated in all districts was 98.

The unit of award was a region comprising approximately seven District Agriculturist districts. Five such regions were set out and these are listed hereunder.

Southern	West Central	East Central	Northern	Peace River
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The regions were set with a view to similarity of soil and climatic conditions and they were approximately uniform as to population of farm operators. Selections of the district committees within a region were then visited by a regional committee comprising one representative of agriculture from this Department, one from the Home Economics Division, a representative of the Experimental Farm System, one farmer and one farm housewife. This committee then made further eliminations of these nominees and recommendations for the awards to a provincial committee consisting of the Deputy Minister of Agriculture and the Dean of Agriculture, University of Alberta, together with representatives of organized farmers and organized farm women in the province.

The Winners for 1949 were as follows:

L. R. Jensen Family, Magrath, Alberta.
W. J. Edgar Family, Innisfail, Alberta.
J. F. Melenka Family, Warwick, Alberta.
J. G. Dusseault Family, Vimy, Alberta.
J. L. Paquette Family, Donnelly, Alberta.

Suitable recognition of these winners was given at community gatherings organized in each case by the community concerned and attended by representatives of interested bodies. A presentation was made to each winner on behalf of the Department of a cheque in the amount of One Thousand Dollars, a suitably engraved copper plaque, and a sign to be erected at the winner's gate indicating the status of Master Farm Family.

An aggregate number of 112 persons assisted with the judging of this programme this year.

The public reaction to the programme has been very favorable, and it is believed that it will be even more extensively patronized during the coming year.

PRAIRIE RURAL HOUSING PROGRAM

The Government and the University continued to be represented on this Committee which has continued its work during the past year.

Project 1. House Planning and Design. The bulletin "Ten Farm Homes" has met with reasonably good response. Work is now proceeding with a view to preparing a final publication incorporating some of the original plans and some which have been prepared as a result of further study, or alternatively, of preparing the new plans as inserts to be added to the first bulletin.

Project 2. Materials and Construction. Research in this field is proceeding at the University of Saskatchewan, and it is expected that a report may be issued some time during 1950.

Project 3. Water and Sanitary Facilities. Research in this project has been completed by the University of Alberta, and the results are in the hands of the printer. It is expected that the report will be issued at an early date.

Project 4. Planning of Farm Kitchens. The report covering research conducted at the University of Manitoba in this project is now in the process of preparation. The members of the Women's Division of this Branch, as well as corresponding branches in Manitoba and Saskatchewan, are now engaged in preparing the report.

Project 5. Heating the Farm Home. The bulletin reporting the results of research in this project are now available for distribution.

Project 6. Community Centres. The bulletin for this project has also been released and made available to the public.

Project 7. Remodelling Farm Homes. Research in this field still continues at the University of Manitoba. Following a field survey conducted during the summer of 1949, it is expected that the report will appear in bulletin form in 1950.

DISTRICT AGRICULTURIST SERVICE

The District Agriculturist Service is continuing to work toward a more desirable balance and more permanency in Alberta's agricultural economy. This balance includes conservation of all agricultural resources, particularly our soil, water and human resources.

In some cases a mass approach through meetings, field days, and demonstrations could best serve the need to carry forward conservation programs. In other cases, it is becoming necessary to work with individual farmers and farm families to promote and demonstrate the basic principles of conservation practices.

We now have to look forward to 1950 and capitalize on experience gained in the past to deal with the changing conditions related to our broad conservation program. One of the main objectives for the District Agriculturist Service for 1950 should be more intelligent use of the tools and methods of extension to best develop this program.

CHANGES IN STAFF

A number of staff changes have taken place during the past year and a continued and substantial improvement in office accommodation has been provided for the District Agriculturists. The following changes are listed:

A. W. Beattie, A. Harboway, and G. A. Ross appointed Assistant District Agriculturists at Red Deer, Vegreville, and St. Paul respectively.

A. A. Campbell was appointed District Agriculturist at Evansburg.

P. Jamieson was transferred from Claresholm to Lethbridge.

H. H. Michael was transferred from Berwyn to Claresholm.

A. W. Beattie was transferred from Assistant at Red Deer to District Agriculturist at Berwyn.

J. A. Goode resigned from the Service as District Agriculturist at Westlock to go into private business.

W. A. Ross was transferred from Assistant at Athabasca to District Agriculturist at Westlock.

G. A. Ross was transferred from Assistant at St. Paul to Assistant at Athabasca.

T. J. Kilduff, District Agriculturist at Thorsby, was transferred to the Lethbridge Science Service Laboratory as Extension Officer.

J. R. Gylander was transferred from Assistant at Lethbridge to District Agriculturist at Leduc.

Paul Gibeau, District Agriculturist at Falher, resigned to go into private business.

R. J. Milligan, District Agriculturist at Strathmore, resigned to manage the Boys Farm at Coaldale.

New and modern offices have been provided at Olds, Ryley, Vermilion, Red Deer, Sedgewick and Youngstown. A new Provincial Building is now being built at Ponoka with accommodation for the District Agriculturist. Plans are also under way for a new building with similar accommodation at Drumheller.

FARM MANAGEMENT

This increasingly important phase of the farm enterprise is receiving more and more attention by the District Agriculturists. Good sound management is becoming recognized as a necessity for any well organized farm. Cropping, livestock and marketing programs on any farm can no longer be successfully planned from year to year with an attempt to forecast the highly unpredictable weather and market prospects. The program for any farm should be built on a sound plan for the long term requirements of the particular farm including soil, climate, market requirements and the family welfare. District Agriculturists have drawn up 57 complete farm plans including soil conservation, cropping practices, livestock programs, seed requirements, farm machinery and buildings, shelterbelts and expected revenue from the plan adopted. Partial plans covering one or more departments have been drawn up for 458 farms with complete cost accounts set up for 25 farms.

SOIL CONSERVATION

Programs and projects organized to actively do something about soil conservation have been growing in number and importance. Many communities, realizing that talking about conservation is not enough, are participating in the program and working with their neighbors to conserve and improve the soil.

Projects and demonstrations have been set up to show by example better cultural practices, the utilization of more forage crops, weed control, seeding down road sides, wind and water

erosion control and soil fertility improvement. In these special projects, 486 farmers have participated and 180 field demonstrations have been conducted. These demonstrations were observed by an estimated 1,802 farmers. Meetings dealing with soil conservation as a major topic have been held on 292 occasions with an attendance of 11,254 people. In addition, 4,852 farmers were otherwise assisted with soil conservation problems, through office visits, correspondence, or farm visits.

WEED CONTROL

Weed control continued to require a large amount of time of the District Agriculturists, particularly during the growing season. It is now being considered as a year round program involving seed cleaning, as well as cultural and cropping practices and chemical control. Through the Service Boards now operating in a number of districts a more practical year round seed control program is being undertaken.

Members of this Service made 168 inspections for licensing of or to give assistance to seed plants, and helped 54 privately owned and community seed cleaning plants with plans for construction, locating machinery, and technical assistance in the operation of the plants. Seed cleaning demonstrations were held on 106 occasions and these demonstrations were viewed by an estimated 4,586 persons. Field demonstrations were arranged in 130 communities, with 74 meetings held to view and discuss the results. These demonstrations and meetings were attended by 3,400 farmers. In addition to the field demonstrations, 228 meetings were held dealing with weed control problems with an attendance of 7,912 persons.

Through farm visits, office interviews and correspondence 4,272 farmers were assisted with weed control problems.

CROP IMPROVEMENT

Cereals

The necessity of introducing new and more desirable varieties of forage crops and cereals to keep pace with the need for better yielding varieties, improved quality and more disease resistance, is directed through the various crop improvement policies. Supervised by the Field Crops Branch, cereal demonstration plots were laid down in 152 localities and 24 field days were held to view and discuss results, with an estimated 4,125 farmers in attendance. Assistance was given in the distribution of 59,318 bus. of registered seed grain and 167,052 bus. of suitable commercial seed. Crops inspections for registration of cereals were made for 254 farmers. A total of 3,802 persons were otherwise assisted with cereal crop improvement problems.

Forage

Realizing that forage crops are of major importance in soil conservation programs, in many districts District Agriculturists have encouraged the seeding down of larger acreages of suitable forage crops for both soil conservation and seed production. Through the Forage Crop Improvement Program 140 farmers

have participated in forage seed production projects with a total of 46,831 lbs. of seed distributed. 104 forage crop demonstration plots were put down and 18 field days attended by 2,337 farmers were conducted.

Pasture

The need for high producing pastures and pasture improvement is recognized by the District Agriculturists. The seeding down of suitable mixtures is given every encouragement through the Pasture Improvement Policy, the location of suitable seed and recommended methods of planting and maintaining maximum yields of forage. During 1949, 125 demonstration pastures were established on farms in various parts of the province. Seed for these pastures amounting to 169,192 lbs. was distributed. Through office contacts, farm visits and correspondence, 3,989 farmers were given advice or help with their pasture problems.

PLANT PESTS AND DISEASES

A total of 47 demonstrations on the control of various plant pests and diseases was arranged. These demonstrations were viewed by an estimated 839 farmers. 270 plant insect pests or diseased specimens were forwarded by the District Agriculturists for identification. Other assistance in the field of plant pests and diseases was given to 2,540 farmers through correspondence, farm visits and office contacts. The southern part of the province has required a considerable amount of work on the part of the District Agriculturists to assist in the bacterial ring rot disease of potatoes. This disease has seriously affected the commercial and seed potato producers, and rigid steps are being taken to prevent the spread of the disease.

LIVESTOCK IMPROVEMENT

This Service has given encouragement and assistance to livestock improvement by assisting farmers and ranchers with many of the problems confronting them. They help locate suitable breeding stock, arrange sales of pure bred and commercial livestock, advise and help with livestock marketing problems, work with Veterinarians and livestock producers in prevention of disease, give advice in the matter of nutrition and feeding practices, and encourage the adoption of labour saving plans.

Actual placement of breeding animals recorded by the District Agriculturists and the Livestock Branch are as follows:

	Under Departmental Policy		Privately and Through Livestock Listing Service	
	Male	Female	Male	Female
Beef Cattle	758	.....	588	610
Sheep	8	.....	91	653
Swine	78	.....	295	307

Meetings dealing specially with livestock problems were held on 155 occasions with 7,180 farmers attending. Eighty-three herds were selected or culled for farmers and ranchers. Assistance in obtaining registration for pure bred animals was given 523 farmers. Dehorner kept in the District Agriculturists' offices

were used by 1,246 farmers dehorning 7,582 head of cattle. Through office calls, farm visits and correspondence, 3,585 livestock producers were given help and guidance.

Marketing

Cattle sales were given assistance in organization and operation in 67 cases with 12,712 animals sold at an estimated saving to the farmer of \$100,000. Other farmers numbering 647 were otherwise assisted with livestock marketing problems.

Pests and Diseases

An active part is being taken by the District Agriculturists in the control of livestock pests and diseases. They have organized communities for the control of Bang's (contagious abortion) and T.B. in both beef and dairy cattle. They have sent in specimens from diseased animals to the Veterinary Laboratories at Edmonton and Lethbridge and have assisted local Veterinarians in avoiding and controlling sickness and disease.

The following statistics record the work of the District Agriculturists in this field.

2,177 farmers have participated in Bang's control programs.

18,127 calves have been vaccinated for Bang's disease.

57 disease and pest control demonstrations have been conducted.

640 persons viewed the results of the demonstrations.

209 disease specimens were forwarded to Veterinary Laboratories.

2,183 farmers were assisted through correspondence, office interviews and farm visits.

Several municipalities have been organized by District Agriculturists as T.B. Free Areas. Numerous other dairymen and livestock producers have been encouraged to have their cattle tested for T.B.

DAIRYING

Dairy farmers and the industry have received a proportionate share of the District Agriculturists' time and assistance through projects such as the location, selecting and culling of the dairy herds, cow testing, Bang's, T.B. and other disease control, feeding nutrition, and junior dairy calf clubs.

The production of clean milk, labour saving devices in the dairy barn and the new loose pen dairy barn all have been given attention.

Dairy farmers participated in 42 projects and took part in 14 demonstrations dealing with dairying. These demonstrations were viewed by an estimated 1,038 persons. Encouragement and assistance was given 61 farmers to start or continue cow testing. Special dairy meetings were arranged on 46 occasions, and these were attended by 2,423 farmers. 41 dairy farmers were assisted with culling their herds to encourage production and improve the quality of milk. Assistance with specific problems in the field of dairying was given to 620 farmers through correspondence, farm visits and office calls.

JUNIOR CLUBS

As in the past years, Junior Club activities have taken a substantial part of the District Agriculturists' time and effort. The training of our rural youth to become good citizens is an important phase of Extension work. Many parents and friends take part in the meetings and demonstrations conducted for the juniors and often the whole community benefits from the activities.

One important need in carrying on Junior Club programs is for more trained local leaders to give the necessary leadership to the growing number of clubs. The District Agriculturist cannot give the active local leadership so necessary to the successful operation of the increasing number of clubs.

236 demonstrations for Junior Clubs, parents and friends were conducted with 11,848 persons attending. During the year 927 Junior Club meetings were held with an aggregate attendance of 18,059 juniors and adults. Training was provided for 44 junior teams entered in Provincial and Dominion competitions. Special features such as Junior Club field days, summer camps, and club rallies were held on 197 occasions and attended by 3,907 junior club members.

AGRICULTURAL SERVICE BOARDS

Since the Agricultural Service Boards have come into operation in the province many worthwhile agricultural enterprises have been undertaken. Some Service Boards sponsor "Save the Soil Campaigns", "Seed Drill Sample Surveys" and "Chemical Spraying Demonstrations". Special projects dealing with soil conservation, weed control, and allied interests were undertaken on 181 occasions. It has been necessary for Service Boards to actively supervise 186 farms which had become badly infested with weeds or had been otherwise neglected.

HORTICULTURE

It is recognized by the District Agriculturists that a well planned farmstead with adequate shelterbelts is a very necessary part of any farm program. District Agriculturists assisted in planning 156 farmsteads and in addition planned 228 shelterbelts. They were instrumental in ordering 115,517 trees for shelterbelts and otherwise assisted 874 farmers with problems related to farmstead planning.

BEEKEEPING

Beekeepers were assisted with the organization of 19 demonstrations in various parts of the province. These demonstrations were attended by 574 persons. 314 persons were otherwise assisted with obtaining package bees, disease control, and with production and marketing problems.

AGRICULTURAL FAIRS

District Agriculturists acted as judges for 45 fairs and otherwise assisted 48 fairs. They assisted 1,019 farm people to make entries, prepare exhibits and to show their entries to the best advantage.

AGRICULTURAL SHORT COURSES AND MEETINGS

Throughout the year, this Service has arranged and conducted 318 Agricultural Short Courses and meetings of a general nature attended by 21,526 persons. These included the 2- to 3-day short courses at the larger centres and the meetings of one afternoon or evening duration at the smaller centres. They included extensive programs with 8 or more speakers, agricultural machinery and supply exhibits and seed fairs as well as the relatively small but effective programs conducted at school houses and community halls with two or three speakers. Although there are occasions when speakers from distant points can bring a worthwhile message, the local Specialists within our own province are recognized as being able to give the farmers the most fundamental and useful information that is required. Their intimate and personal association with local problems enables them to deal directly and more effectively with these problems. Agricultural education should be the main objective in the planning of our short courses and meetings.

AGRICULTURAL ENGINEERING

The intelligent and efficient operation of agricultural machinery has become a necessary part of successful farming. Machinery to reduce labour and drudgery and at the same time effect economy in operation continues to take a large part in Alberta's farming program.

District Agriculturists have helped in this field by organizing and conducting 921 short courses and meetings featuring some phase of agricultural engineering. These meetings were attended by 9,686 farmers. Through office interviews, farm visits and correspondence, an additional 1,233 farmers were given assistance in this field.

FARM LABOUR

There has been a slight reduction in assistance given by District Agriculturists during the past year in the matter of farm labour placements. This is largely due to the gradual change to peace-time operations and to the reduction in the movement of Displaced Persons. Throughout the year 708 Displaced Persons were visited to assist in placement or adjustments. General farm labour numbering 1,699 were placed through the offices and 560 workers were directed to other industries. An additional 2,006 harvest workers were directed to employment.

MISCELLANEOUS

Many other activities not classified and mostly local in nature can also be mentioned. A large amount of time has been

taken by District Agriculturists in the Peace River Area assisting farmers with farm water supply problems. In the newly settled areas in the Peace River, seed grain has been made available through the District Agriculturist offices mostly from the Spirit River office. Assistance has been given with cobalt deficiency experiments with livestock. District Agriculturists have acted on Veterans' Land Act Committees, organized Swine Improvement Associations in some districts, and assisted in judging small holdings under the V.L.A. program. They have organized projects to backslope and seed down roadsides and have conducted brush spraying demonstrations with the use of chemicals, and have encouraged certified seed potato production.

STATISTICS OF DISTRICT AGRICULTURIST ACTIVITIES

	1946	1947	1948	1949
Number of Meetings	1,392	1,608	2,036	2,330
Attendance at Meetings	81,830	80,536	101,248	130,342
Farm Visits	17,999	18,616	19,835	21,337
Office Interviews	38,819	38,800	44,453	42,861
Telephone Calls	28,738	31,124	36,461	34,592
Letters Written	33,320	32,351	39,067	34,746
Bulletins Distributed	110,619	83,924	109,496	94,724

HOME ECONOMICS SERVICE

DISTRICT HOME ECONOMISTS

District Home Economists worked with 613 organized women's groups in 1949, with a membership of 13,258 homemakers, and supervised 125 Girls' Clubs with a membership of 1,666 farm girls. There were 208 women's groups on our lists with an approximate membership of 2,824 women who were not directly contacted this year because the District Home Economists were not able to meet all the demands for their services and because some of the groups are not yet familiar with the services available. However, some of these women may have received individual assistance given to homemakers by the District Home Economists through home visits, phone calls, office interviews and letters, the demand for which has been greatly increased this year as outlined in the summary.

There are now thirteen permanent District Home Economist offices, a new office having been opened at Rley. The shortage of Home Economists available and suitable for extension work has been more pronounced this year than at any time in the past, which accounts for failure to open two more new offices as planned for this year. There were three resignations, Miss Lucille Rioux from the St. Paul office, Miss Norma Smith from the Wetaskiwin office and Miss Arlene Steffensen, temporarily assisting at the Grande Prairie office. Two transfers were made, Miss Edith Armstrong from Camrose to Westlock and Miss Ruth Murray from Westlock to Wetaskiwin. Four new District Home Economists were appointed, the thirteen offices being occupied on December 31st as follows:

Grande Prairie	Miss Cecilia Connelly
Westlock	Miss Edith Armstrong
Edmonton	Miss Ruth Whaley
St. Paul	Mrs. Joyce Reiersen
Vegreville	Miss Grace Horbay
Riley	Miss Sheila Forrest
Wetaskiwin	Miss Ruth Murray
Camrose	Miss Lillian Popoff
Stettler	Miss Priscilla Mewha
Red Deer	Miss Margaret Smith
Calgary	Miss Norma Hogg
Brooks	Miss Lillian Wasiuta
Lethbridge	Miss LaPrile Low

During the summer months, the Home Economists at the Schools of Agriculture, Miss Christine McIntyre, Miss Gwen Caverhill, Miss Helen Moseson, Miss Mary Hawrelak and Miss Evelyn Curran were assigned to districts to assist the District Home Economists. This assistance is limited by unfamiliarity with the work, and also by holidays and summer short courses at the Schools.

One undergraduate student in Home Economics was appointed for four months to assist in Girls' Club work. This pre-training of possible future District Home Economists has proved valuable, three of our present permanent staff having gained experience and interest in extension work in this way.

Provision of cars for eight District Home Economists has demonstrated the possibility of improving the quantity, quality and scope of the work. It is also notable that the Home Economists with cars are more enthusiastic about their work, having greater opportunity to use their initiative and to do follow-up work showing results.

While the District Home Economists each serve three District Agriculturist areas and report that they are not able to meet the demand for the services, a special effort is being made to increase effectiveness through analyzing the needs of the various areas within their district and of initiating programs to assist in these needs. Plans are being made to obtain more definite records of results of the different phases of work in the coming year.

This year has shown a considerable increase in interest and demand for instruction in home sewing and in home improvement through remodelling and decorating. Phases of Family Life education related to child growth and development and family relationships are being more widely studied in discussion groups. A marked improvement is notable in women's groups as to their awareness of the responsibility of the individual homemaker, in keeping abreast with advances in science, and in applying this new knowledge to improve the health and happiness not only of her own family but the community in which she lives. Farm women are becoming more interested in community life, in government activities and international affairs. Programs and activities to meet these new developments will be considered.

CLOTHING AND HOME SEWING

The increased demand for sewing clinics and assistance with clothing problems is due, in part, to the fact that more women are familiar with our services, and that the "clinic" method of assistance continues to receive the enthusiastic approval of farm homemakers. Also, considering the continued high price of clothing, particularly children's garments, this service is one which can result in considerable saving to the family clothing budget. District Home Economists organized and supervised 230 sewing clinics with 7,450 women taking part. The clinics varied from 2 to 5 days each, large groups being divided into "beginners" and "advanced" classes with morning and afternoon sessions and frequently, demonstrations given to the combined groups in the evenings. Records kept at six sewing clinics held by one Home Economist showed a saving estimated by the 102 women attending of \$746.92 on the new garments made. Records of savings on "made-overs," particularly for children, would show a much larger return. Also improved technique in sewing, gained at these clinics, can be applied to all future sewing projects. Lectures and demonstrations on other topics related to clothing were given—76 on "How to Dress," 30 on "Use and Care of the Sewing Machine," 21 on "Know Your Fabrics," as well as 104 lectures or demonstrations given to Girls' Clubs taking clothing projects. These topics also are covered at all sewing clinics. Forty-six newspaper articles were prepared on problems related to clothing. Through home visits and office interviews, 478 individuals were assisted with sewing and clothing problems.

FOODS AND NUTRITION

A total of 213 lectures and demonstrations on food or nutrition topics have been given by District Home Economists as follows:

No.	Topic	Attendance
74	Food Preparation	3,216
56	Food Preservation	4,303
32	Nutrition	872
53	School Lunch	1,742

Demonstrations on food preparation have proven to be popular where the community has adequate facilities for such. Topics have included Supper Dishes, Salads, Sandwiches, Egg and Cheese Dishes, Milk in the Diet, Quick Breads, and Pressure Cookery. Most of the Home Economists have based their efforts to introduce nutrition topics through programs dealing with food preparation or preservation. In the latter field there is an increasing demand for demonstrations on the freezing of foods. One District Home Economist has supervised the experimental tests at the Provincial Horticultural Station, of varieties of fruits and vegetables suitable for freezing, as well as other tests to demonstrate the best methods for processing the frozen foods. The results have been of particular value to the growing Frozen Food Locker Plant industry and to the District Home Economists who advise homemakers on frozen foods.

General nutrition topics have included meal planning and buymanship as well as food habits and the relation of food to

health. During the year the Home Economists have given assistance to 39 Nutrition Study Groups. In some districts, notably Acadia Valley, Three Hills, and districts in the Wetaskiwin area, reports indicate that much has been gained from the courses. Requests for the study course indicate increased interest in the subject.

During the year, 54 lectures or demonstrations in food were given to Girls' Club groups. Since the mothers, and other adults usually attend such meetings our Girls' Club work is proving an excellent way of bringing food and nutrition information to the people. The increase in number of food clubs gives promise of still more contacts next year.

Ten radio talks on food or nutrition topics were given by District Home Economists in 1949, and 103 newspaper articles were written for local papers. An inestimable amount of assistance to homemakers is given through personal contacts during home visits or after meetings, and also through correspondence and telephone calls.

GIRLS' CLUB WORK

Supervision of the Girls' Clubs is carried on by each Home Economist in her own district under the Provincial program. They give close direction to the leaders, and they are able to continue work with their young people in the district after they are beyond club age.

In 1949 the District Home Economists directed 125 Girls' Clubs with a membership of 1,666. This occupied, on an average, 25% of their time. They gave 258 talks or demonstrations on foods, clothing, home decoration and club work and attended and judged at Achievement Days with all clubs. There were 23 field days, rallies or tours organized and conducted, with the educational program being carried on mainly by the District Home Economists.

In four districts, Farm Girls' Camps were conducted in connection with the Fair. Instruction was provided by the District Home Economists and other staff members. A number of the Home Economists assisted with the supervision and instruction at the Club Weeks and leader's courses held at the Schools of Agriculture during the summer months. During the year 39 former club members were assisted with homemaking or vocational problems.

HOUSING

The District Home Economists gave assistance in organizing and supervising the 58 groups taking the Interior Decoration Home Study courses. This aggregate number represents 1,095 rural women who have been contacted and interested in home improvement and beautification.

With the aid of the Prairie Rural Housing bulletin, "10 Farm House Plans," 129 rural families received help in selecting and planning a suitable farm home to be built in 1950.

There is a pressing need and demand for guidance in the wide and varied field of Remodelling. The assistance given by the

District Home Economists in the problem of improving older farm homes, so that they meet at least minimum standards for living, is bringing much satisfaction. An important feature has been the problem of adjusting the objective, to the means of the family. Such necessities as basements and heating plants, insulation and weatherproofing were stressed in order to make the homes of those in the lower and medium income brackets comfortable for daily living. Remodelling is one of the largest fields in rural housing and remains to be more fully developed in the coming year.

In many cases the remodelling was limited to the kitchen and utility room. To date 26 kitchens have been fully modernized while many others were improved with minor changes. The advent of rural electrification in a district was the chief motivation for extensive kitchen modernization.

The District Home Economists gave 76 lectures and demonstrations with a total attendance of 2,812, on many phases of home improvement and interior decoration and helped many other women to redecorate and beautify their homes.

Aid was also given to the farm women in the associate fields of household appliances, water systems, heating equipment and electricity.

HOME MANAGEMENT

Since this field was emphasized for the two previous years, most of the Home Economists only met special requests as follows: 16 lectures on "Planning Expenditures," 17 lectures and demonstrations on "Time and Energy Savers," 89 illustrated lectures on "Buymanship and Care of Textiles, Foods, Equipment or Home Furnishings," 15 lectures on "Home Safety." A total of 2,816 women attended. Individual assistance was given 221 homemakers. Sixty-eight newspaper articles were prepared dealing with these topics.

FAMILY RELATIONSHIP

Resulting from the increase in marriages, there is a larger proportion of families in the early stages of the family cycle and an increasing demand for guidance in child growth and development. More attention is being focused upon psychological factors effecting a happy relationship in family living, upon life goals which matter most, and ways of achieving them. One staff member has made a special study of this field and one other has recently taken special courses in child and adolescent psychology. There were 42 lectures with an attendance of 1,155 homemakers given this year. Plans are being made to prepare an outline for discussion in study groups and to encourage some of the more experienced Home Economists to become more acquainted with the problems and possibilities of assistance in this new field. We cannot overlook the importance of this field and its relationship in reaching both our objectives in other fields of Home Economics and our ultimate goal of "better living for farm families."

HANDICRAFTS

A total of 224 demonstrations attended by 5,894 women were given on the following: Leathercraft, gloyemaking,

rugmaking, toys, bazaar ideas and Christmas gifts, textile and china painting, metal etching, weaving, Ukrainian embroidery stitches, needlepoint, knitting. While this type of demonstration and "clinic" is extremely popular with rural women, the District Home Economists must limit their time in this field and encourage this work mainly in new areas or with groups not yet familiar with our services. It provides a means of becoming acquainted and ultimately assisting with more fundamental problems. In addition, a few individuals do use these crafts as additional sources of income and many others as a means of making their homes more attractive and of making inexpensive gifts. A greater appreciation of color, line, design and dexterity in the use of the hands, is developed.

OTHER DEMONSTRATIONS AND LECTURES

There were 36 meetings, attended by 1,163 homemakers and girls on topics related to etiquette, entertaining, table-setting, and flower arrangement.

There were 94 general talks outlining the services of this branch, 36 more dealing with women's work, 51 with girls' club work, and 17 with the Schools of Agriculture—the total attendance at these being 3,985. In addition the Home Economists discuss the Services of the Extension Branch at meetings with any new groups receiving demonstrations.

SHORT COURSES, FIELD DAYS, AND MEETINGS IN CO-OPERATION WITH OTHER ORGANIZATIONS

District Home Economists lectured and demonstrated at 100 short courses and field days. Forty-nine of these were in co-operation with the District Agriculturist, 29 with the Dominion Department of Agriculture, 3 with the University Community Life Conferences. In addition 22 meetings were in co-operation with the Agricultural Service Board, and 32 with Rural Health Units.

JUDGING AT FAIRS, CONVENTIONS, AND W.I. CONFERENCES

District Home Economists judged at a total of 95 fairs, conventions and conferences. In addition arrangements were made for judges at many of the fairs at which the Home Economists were too busy to judge or unable to attend. Two publications, "Suggested Prize List" and "Standards for Judging", prepared by this branch for judging home cooking, sewing, handicrafts, and other home products, are doing much to assist Fair Boards, to improve the type of exhibit and to lessen the problems of judging. Home Economists assisted in the organization of 12 Fairs and prepared 10 exhibits.

RADIO, NEWSPAPER ARTICLES AND NEWSLETTERS

A total of 62 radio addresses on timely topics of interest to rural homemakers and girls were given by the Home Economists, 2 each month for the Farm and Home Forum, in addition to regular addresses over the Red Deer and Grande Prairie stations,

and others for the W.I. programs, C.B.C., etc. It is evident that the more regular and frequent the program the greater the response, since homemakers will make a point of listening if the time is easily remembered.

A total of 357 newspaper articles were prepared for use by several different papers in the respective districts of the Home Economists. Nine of the District Home Economists prepare regular columns for local papers.

To keep in closer touch with women's groups, District Home Economists prepared 70 newsletters containing timely information and announcements of new programs, services or publications. A copy is sent to each group and it is reported that they are enthusiastically received and read to all at their meetings.

D.P. DOMESTIC WORKERS FOR FARM HOMES

District Home Economists investigated applications, placed and visited workers in these homes. While there were fewer new arrivals (35) this year, a considerable amount of time was spent in arranging 73 transfers and giving necessary guidance to the 132 workers completing agreements from the previous year.

OTHER ACTIVITIES

The Home Economists assisted in judging 100 farm families nominated in the Master Farm Family Competition; the Supervisor and one Home Economist assisted the Regional Judging Committees.

SUMMARY OF ACTIVITIES OF HOME ECONOMICS EXTENSION SERVICE

	1944	1945	1946	1947	1948	1949
No. of Demonstrations	557	990	1,140	1,095	1,263	1,972
Attendance	19,317	34,338	39,900	37,125	43,101	69,446
Average Attendance	34.6	34.7	35	34.7	34.1	35.2
Fields Days and Short Courses, etc.	57	129	83	54	62	100
Judging at Fairs, Conventions	20	23	25	19	50	95
Radio Talks	28	21	38	37	51	62
Publications distributed	62,000	68,400	78,080	68,910	87,240	86,331
Letters requesting Information	1,786	6,663	8,788	7,617	16,807	13,159
Home Visits	621	911	1,021	998	1,389	2,607
Girls' Clubs	85	87	93	90	110	125
Office Interviews	—	—	827	922	982	2,180
'Phone Calls for Information...	—	—	1,646	2,189	2,277	5,239

FOODS AND NUTRITION

With an increased number of District Home Economists this year, more time has been spent in providing them with nutrition information and suggestions for getting nutrition facts across to the public. This has been done through a series of newsletters dealing with such topics as The World Food Situation, Food Research and Health, Nutrition and Preventive Medicine, Diets, Nutrition Education, The Human Factor in Teaching Nutrition. During the year 7 newsletters, 4 circular memos and 87 individual memos were written to Home Economists.

Correspondence has included 115 answers to requests for information on food and nutrition topics. Seventeen of these

were requests for our Nutrition Study Course and information pertaining to the same. Two other study groups were organized following nutrition talks given to these groups.

A two-week period was spent in the Rocky Mountain House School District with the Home Economist from Red Deer. A program of school visits and meetings with adult groups had been arranged as a follow-up to the series of letters sent to rural school teachers during the school year of 1948-49. The program arranged for this period is a good example of what can be accomplished through the co-operation of workers in Health, Education and Agriculture. Arrangements for the school visits and meetings were made for the Home Economist by the Public Health Nurse. Consultations were held with her and with the School Superintendent to help determine the needs and the best methods of approach in the various schools. The Nutrition Specialist gave illustrated talks on "Why We Eat", with stress on the good school lunch, to 23 school groups (589 children in all). Suggestions for incorporating nutrition into their school program were given to the teachers. Observations made regarding the adequacy of school lunches and of outward signs of good or poor nutrition among the children were used as a basis for these suggestions, and also for examples in talks to parent groups. The Home Economist will revisit the schools in the Spring to assess the progress made.

Eleven school visits were made in addition to the above, and assistance was given in organizing lunch programs in two consolidated schools.

The Nutrition Specialist addressed a total of 68 adult meetings attended by 2,205 people. The School Lunch Program was the topic at 9 of these meetings, 18 were on food preparation or preservation and 41 on general nutrition topics, including meal planning and buymanship.

The Nutrition Specialist assisted with one Short Course for young people and gave demonstrations at two other Short Course programs. An address was given to the women at Farm Women's Week at Vermilion on "The Joy of Eating". She attended the Short Course for Girls' Club Leaders and explained the outline of food projects. Addresses were given also to classes of teachers and Public Health Nurses at the University of Alberta.

A very gratifying phase of the work is the food and nutrition information prepared for Girls' Club projects and the assistance given in training the food teams for competitions at Toronto. A new project "The Main Dish" is now being prepared for clubs needing more advanced projects.

Five Radio addresses were given by the Nutrition Specialist in 1949, 3 on the Farm and Home Forum and 2 on Women's Institute Programs. Topics were "Give Zest to Your Winter Meals", "Holiday Meals", "Your Food and You", "Three Meals a Day for the School Child" and "Is Your Pre-School Child Prepared for Winter?"

The short course for School Dormitory Supervisors, held at the Olds School of Agriculture from July 4 to 9, was conducted

jointly by the Nutrition Specialist in charge of the food section and an official from the Department of Education—Mr. J. R. S. Hambly, Sup't. of Schools, Grande Prairie—dealing with the supervision angle. The course was planned to include instruction in quantity cookery by Miss Margaret Lock, Supervisor of Group Feeding Section, Ottawa, but unfortunately Miss Lock was unable to attend. Notes on "Quantity Food Planning and Preparation" prepared by Miss Lock were presented to the groups together with some additional material by Miss Lewis. The course included instruction in menu planning, food purchasing, food storage, food preparation, use of recipes and recipe conversion, sanitation and care of equipment.

A period of one week was spent at the Red Deer Composite High School Dormitory in follow-up of the nutrition survey conducted in that dormitory near the end of the preceding term. Lectures were given to students in Health, Science, and Home Economics. Menus were charted each day showing food values provided by the menus as compared to recommended allowances for optimum nutrition, and the proportions of these food values provided by the different food groups. The main purpose of these charts was to show the students the nutrition deficiencies in their diets when certain foods provided were not eaten. They also served to show the staff where a few changes for the better could be made in the menus. On request, observations and recommendations regarding the food service at the dormitory were submitted to the Divisional Board.

No new material on food and nutrition has been prepared in bulletin or leaflet form in 1949. As an effort to obtain some measure of the adequacy of material already being distributed, and to determine more of the needs of individuals and communities, a questionnaire was prepared and sent out to women's groups. Over 1,000 questionnaires were sent out and to date only 43 have been returned and many of these are quite inadequately answered. However, returns are still coming in and some information of value is being gained. Each of the Home Economists is being asked to discuss this form with ten groups in her district to explain each question and get complete answers.

Replies received indicated that as sources of food information magazines topped the list, with newspapers second, radio third and discussions with friends and neighbors fourth. The lowest rating was information brought from school, but the percentage using that information was highest, with special meetings or short courses second, discussions at club meetings third, and radio fourth. Less than 50% reported that they had used information gained from newspapers, magazines, or bulletins and pamphlets.

The question on nutrition was left unanswered in many cases. Less than 35% reported having gained information on nutrition from any source. Again magazines topped the list, with newspapers second, discussions in club third and radio fourth. Special meetings or short courses seem to have been most effective with 78% reporting having used information received. Discussions with friends or neighbors placed next, newspapers third and magazines fourth.

In reply to the question "Which do your group members think would be the most successful way (or ways) of getting information to women like yourselves?", demonstrations was the most popular, with booklets and pamphlets second, discussion groups third and newspapers and magazines fourth. The placing of booklets and pamphlets does not correspond with ratings given to these in other sections. Further study will be necessary to determine the reasons for this apparent discrepancy.

The field of nutrition education continues to present a challenge to nutrition workers. In the coming year the Nutrition Specialist hopes to spend still more time in work with the District Home Economists in their fields, helping them to feel this challenge and to plan programs which will more effectively meet the needs in their districts.

HOME DESIGNING

The year 1949 saw the completion of the first phase of the program designed to improve Alberta Farm Homes.

HOME STUDY COURSE

The first of the series of the home study courses was prepared for use by rural groups interested in the problems of improving the farm home. The Interior Decoration Home Study Course filled a popular demand and was presented to organized women's groups in the early fall.

Six illustrated bulletins, covering many phases of interior decoration, were compiled for this project. These bulletins were so designed as to fill multiple purposes, those of group study and general distribution. The subjects dealt with were as follows: 1. "Curtains Going Up"; 2. "Colour in the Home"; 3. "Putting Furniture in Its Place"; 4. "Furniture Refinishing"; 5. "Flatter Your Floors"; 6. "Walls and Ceilings—the Stage Setting of Your Home".

These books were distributed to study groups accompanied by a project book which outlines a method of handling the course. This book contains questions for discussion, a suggested demonstration for the speaker, a project for group activity, and reference material.

In order to eliminate the need for an appointed leader or program convener, the groups were asked that every woman in the group be responsible for taking part in a talk or demonstration dealing with the material contained in the Home Study Course and the suggested reference material.

Display cards dealing with window treatments, floor coverings, fabrics and instruction on how to paint and wallpaper were made available for group study.

In many cases the first meeting of the Home Study group was attended by the Home Designing Specialist and the District Home Economist. Then the course was turned over to the groups who were instructed to seek further advice and guidance from their Home Economist.

The course was received with enthusiasm and 58 groups have undertaken the study. This figure represents 1,095 women from widely scattered parts of the province. Twelve applications have been received for next year's series.

KITCHEN PLANNING

Another bulletin, "Kitchen Storage—a Matter of Inches", was completed this year. This bulletin illustrates many ways that farm women could increase the usefulness of present storage space. It was hoped that this bulletin will serve as a supplement to the Prairie Rural Housing book, "Farm Kitchen Planning".

A kitchen planning campaign has been recently developed to encourage homemakers to employ kitchen planning principles. A group of women gather in one home, that is about to be remodelled, to witness a demonstration on how that particular kitchen may be modernized. Slides and films have been used extensively on the subject of Kitchen planning.

There is a growing need for planning guidance, for, with the furtherance of rural electrification, more modernization is possible. To date 35 kitchen planning blueprints have been sold.

REMODELLING

A Remodelling Kit has been prepared to assist homemakers in future remodelling projects. This kit consists of a questionnaire, instructions for drawing a scale plan of the house, and sheets of squared paper on which the plan is to be drawn. The scale plan and the questionnaire completes the information required to replan a house. This year 19 homes, 29 kitchens, and 35 living areas have been re-designed for rural people.

HOME PLANNING

Short Courses on Farm Home planning have proven helpful to the prospective builder. Slides of the 10 Farm House plans and other slides on planning principles were used. The prospective builders were instructed in the analysis of a house plan to insure them of a suitable home for their family needs.

As a result of these lectures and newsletters rural builders have purchased 135 Prairie Rural Housing blueprints.

The request for blueprints was followed six months later with a questionnaire which attempted to find out what changes, improvements, adaptations, were made in the original plan, approximate costs and building materials were also given. This information will prove valuable in the design of future farm house plans.

OTHER ACTIVITIES

Monthly newsletters were distributed to the district offices and to persons on the rural mailing list. These summarized up-to-date information on household equipment and appliances, new building materials and housing trends.

Radio addresses numbering six were given for the Department of Agriculture, Women's Institute and the C.B.C.

FUTURE PROJECTS

New slides are being gathered to extend the present library. These will cover furniture styles, construction and arrangement, window treatments and other phases of Interior Decoration.

Several new bulletins are underway—one will deal with closets and storage space and the other will contain handy aids for the farm housewife.

The completion of the Prairie Rural Housing Committee booklet Kitchen Planning has been undertaken by this office.

AGRICULTURAL ENGINEER

Following appointment, the first work carried out in the spring was arranging for and conducting tillage field days, tiller competitions and plowing matches. Forty-eight field days, 11 tiller matches, 4 combined tiller and plowing matches, and 4 plowing matches were scheduled to be held between May 20 and June 30. Of these all but two field days, which were cancelled because of rain, were actually conducted. The average attendance at the field days was 66 persons while at the competitions the average attendance was very close to 500. The aggregate number attending all of these events was just under 13,000.

The tiller competitions had gained in popularity during the preceding year. Moreover, the difference in the standard of work done at those places where the tiller competition was being held for the second time was very much improved over that where the competition was held for the first time. This improvement was noticeable even in the work of men who had not been in the competition the previous year, which would indicate that some educational value should be attached to these competitions.

Keen interest was shown in the various points of adjustment, especially if the crowd was allowed to follow the demonstrator across the field. At the same time comparison of the results of various adjustments was easily made on the lands worked by the competitors themselves.

Mr. S. C. Acheson, Vermilion School of Agriculture, Mr. F. F. Parkinson, Field Crops Branch, Department of Agriculture, and Mr. J. K. McKenzie, Institute of Technology and Art, Calgary, assisted in conducting the field days and competitions. As in previous years, it was found necessary to have two men at the tiller competitions and three or four men were required to conduct the combined tiller competition and plowing match. Mr. H. Leggett, Assistant Superintendent, Lacombe Experimental Station, Mr. F. Maddex, Field Supervisor, Wainwright Municipal District, Mr. F. Strashok, Field Supervisor, Lamont Municipal District, Mr. Alex Paton, Edmonton, Mr. F. Riske, Lacombe, all assisted in judging at one or more of the tiller competitions and/or plowing matches.

A haying machinery field day was held at the Breton Plots of the University of Alberta with 250 farmers in attendance. Haying machinery operation and adjustment was described and this was followed by a demonstration of the equipment that had

been brought to the plots. Poor growing conditions made proper operation of haying equipment very difficult, but in spite of this much interest was shown in the actual demonstration work.

Nine harvesting short courses were conducted throughout the central and northern part of the Province. These dealt mainly with operation and adjustment of the combine, but also included operation of the thresher and binder. The average attendance at these meetings was 47.

In addition to the above, three lectures were delivered on rural electrification and one on 2,4-D equipment. A paper on seed cleaning equipment was delivered at the Western Canadian Weed Control Conference and two papers were delivered at the Alberta Agricultural Engineering Committee Meeting. Three meetings were attended dealing with seed cleaning equipment and operation.

Four radio addresses were given over CKUA and ten items were prepared for "Farm Notes".

Two new plans were prepared and printed. Approximately 2,000 copies of one of these "Grasshopper Bait Spreaders" were distributed early in the summer, while 250 requests were received during autumn for copies of "Straw Buncher for Combine".

A pamphlet showing four farm gates was drawn up and mimeographed, and to date approximately 300 copies have been distributed. A pamphlet on stucco application also was assembled and mimeographed, while the pamphlets on Cement Sawdust Concrete, Barn Ventilation, and Measurements of Hay in Stacks, were revised and reprinted.

From May until the end of the year approximately four hundred letters were written covering practically all phases of Agricultural Engineering. The three main topics of interest were Farm Water Supplies and Sewage Disposal, Farm Building Plans, and Farm Machinery, in that order. In addition to this about an equal number of plans and pamphlets were dispatched with mimeographed enclosure, when all information required was given in the printed material.

RADIO AND EDITORIAL SERVICES

The Alberta Farm and Home Forum, a radio broadcast sponsored by the Alberta Department of Agriculture and the Faculty of Agriculture, University of Alberta, is directed primarily to the farmer and homemaker of Alberta. This program is heard at 8:15 p.m. every Monday, Wednesday, and Friday throughout the year from radio stations CKUA and CJCJ. Each broadcast, of fifteen minutes duration, takes the form of a short talk or discussion by specialists in agriculture or home economics, followed by notes of topical interest prepared and presented by the Agricultural Extension Service.

During 1949, 88 of these talks were delivered by members of the Alberta Department of Agriculture. Speakers from the Department deal with practical application of modern principles on the farm and in the home. They provide information about

the various policies, outline campaigns, encourage action towards improvement of crops, livestock and soils, and strive for higher standards of farm and home management. Members of the Faculty of Agriculture make known results of their experiments, tell how these experiments are conducted, and suggest how this information may be used to advantage on the farm. Information is directed toward a more profitable and enjoyable rural life.

The written word supplements the spoken word. Bulletins and circulars provide ready reference for the farmer and homemaker. The more attractively these publications are prepared, the more likely they are to be read and retained. It is not enough to present the information. Information must be provided in such form that it is readily understood by the reader. Careful writing and constant revision are required to attain this objective. If an extra hour of the writer's time will save only five minutes for each of his readers, the total time and effort saved amounts to considerably more than that expended by the writer—and with far reaching results. The writing will be more widely read, and more generally understood, and the information more likely to be used. There is an increasing tendency toward readability in bulletins and circulars published by the Department, and this office has been pleased to assist in the encouragement of this worthwhile effort.

Issued weekly, a series of items under the heading "Farm Notes" has provided information from various members of the Department. Although primarily for use of editors of daily, weekly, and farm periodicals, considerable interest is evidenced in their contents by commercial firms and individuals. Use is made of these items by radio stations in the course of their farm and general broadcasts, and the frequency with which editors give prominence to these notes indicates the favour with which they are received.

During 1949, reports of agricultural conditions were issued every two weeks from May to September. These reports were compiled from questionnaires completed by some 200 correspondents throughout the Province. We take pleasure in acknowledging our appreciation of their efforts and of the active co-operation of the various members of the Department during the year.

AGRICULTURAL INFORMATION

The purpose of the Office of Agricultural Information is (1) to assemble scientific and practical data relating to agriculture; (2) to make the material collected available to the technical officers of the Department; and (3) to serve as a medium through which Specialists in the various Branches of the Department, may keep the field staff informed on the practical aspects of scientific and experimental data brought to their notice.

Thus the effectiveness of the work done in this office, depends in large measure upon direction received through requests from Branches, and the final use made of the material provided.

Twenty-three issues of "Agricultural Information" were prepared and distributed during the year. The titles were as follows:

1. Farming with a Plan.
2. Farm Records.
3. Breeding Better Layers.
4. Canada's Agricultural Outlook.
5. Treated Seed Grains Found Fatal to Hogs.
6. Misuse of Soil Aggravates World Food Shortage.
7. Canada Plans Land Conservation.
8. Food and Agricultural Organization of the United Nations.
9. Pelleted Seeds Need More Research.
10. Built-up Floor Litter Improves the Hatch.
11. Dominion Experimental Station, Lethbridge, Progress Report 1937-1946.
12. Making Rented Farms Better.
13. World Population and Food Supply.
14. Records Never Made a Farmer, But . . .
15. Should Range Heifers be Bred as Yearlings.
16. Improving Tomato Fruit Set.
17. World Food Production and Consumption Outlook.
18. Farm Business Arrangements Can be Made to Suit Any Situation.
19. Father-Son Agreements: A Bridge Between Generations.
20. Fear of World Hunger.
21. The Importance of Inheritance in Acquiring Farms.
22. The World Food Situation and Factors Affecting Exports from Canada.
23. Bilateral Trade Agreements of the United Kingdom.

A general bulletin entitled "Farming in Alberta, Canada" was prepared. It describes the agricultural resources of the Province, the extent to which they have been developed and present utilization. The bulletin is well illustrated and contains four maps.

REPORT OF VETERINARY SERVICES BRANCH

E. E. Ballantyne, V.S., D.V.M. - Director
J. G. O'Donaghue, V.S., D.V.M. Extension Veterinarian
G. S. Wilton, V.S., D.V.M. - - Veterinary Pathologist
C. H. Bigland, V.S., D.V.M.,
D.V.P.H. - - - - - Veterinary Pathologist

GENERAL

The total disease losses among Alberta livestock and poultry are estimated to be approximately \$2,000,000 annually. This estimate may even be very conservative, considering the large livestock and poultry population. Much of these losses can be prevented through improvements in proper nutrition, housing and sanitation. In spite of these high aggregate losses there were no serious outbreaks of disease in Alberta during 1949, other than on individual farms or small areas. It must be remembered that all of Canada is fortunate in being free of plague diseases such as occur in many foreign countries. Credit for this must be given to strict import regulations administered by the Dominion Health of Animals Branch. Otherwise, the disease problems in Alberta would be much greater.

NEW VETERINARY LABORATORY

Forerunner of Alberta's modern, new veterinary laboratory was started in 1940 in the Terrace Building. That year, 809 specimens were submitted for examination. In 1946, this figure had increased to 2,204, plus more than 4,000 blood samples, and a larger laboratory became a necessity. Accordingly, in 1947, the Alberta Department of Agriculture commenced construction of the laboratory which was officially opened in July, 1949.

The move was well timed, for during 1949 the number of specimens submitted had risen to 5,522 along with 25,258 blood samples. In view of this, it is readily apparent that the greatly improved facilities now available will play an important part in combatting disease problems in Alberta.

The new \$100,000 laboratory was occupied on April 13th and officially opened by the Hon. D. B. McMillan, Minister of Public Works, at a fitting ceremony on July 14th. Mr. O. S. Longman, Deputy Minister of Agriculture acted as chairman. Addresses were given by the following:

Mr. Hugh Allen,
President, Alberta Livestock Co-operative.
Dr. M. R. Bow,
Deputy Minister, Alberta Department of Health.
Dr. R. D. Sinclair,
Dean, Faculty of Agriculture,
University of Alberta.
Dr. A. J. Rattray,
Representative, Alberta Veterinary Medical Association.
Dr. E. E. Ballantyne,
Director, Veterinary Services Branch.

Approximately 200 representatives from various livestock and poultry associations, provincial and Dominion government departments were present.

This laboratory is one of the best staffed and equipped in the Dominion of Canada and as such will render valuable service in reducing disease losses in the province. Contribution to scientific knowledge of value to all of Canada will also be made. The addition of a micro-pathologist and bacteriologist to the staff would aid considerably in increasing the value of the laboratory service to the livestock and poultry industries.



1. Veterinary Laboratory.



2. Animal Disease Section.



3. Poultry Disease Section.

T.B. RESTRICTED AREAS

Present T.B. Restricted Areas in Alberta are the following municipalities: Nos. 47, 48, 54, 63, 82, 83, 73, and 75. Testing by the Dominion Health of Animals Branch was quite active during 1949 with the M.D. of Beaver No. 73 and Leduc No. 75 being completed. Retesting was started in Strathcona No. 83 and Stettler No. 54. M.D. of Kneehill No. 48 was the one new Restricted Area established during the year.

The plan is to make Restricted Areas of all the municipalities between Edmonton and Calgary, bounded on the east by the present T.B. Restricted Areas and on the west by the Saskatchewan River and the foothills. Therefore, petitions are being circulated in all these municipalities, as well as in Wainwright and Vermilion River, because the latter border on Restricted Areas in Saskatchewan. Gradually, municipalities bordering on these will be added as rapidly as possible until the whole province is a T.B. Restricted Area.

The Dominion Health of Animals Branch has agreed to use practising veterinarians more in testing of these areas. They are assisting in Strathcona, Stettler and Kneehill. With this assistance, the tempo of area testing can be greatly accelerated.

VETERINARY STUDENTS

Thirty-two students from Alberta are attending the Ontario Veterinary College. The number in each year is as follows:

First Year—4

Second Year—5

Third Year—10

Fourth Year—13

In the interests of the livestock industry, the Department of Agriculture financially assists each of these students with a \$200.00 grant annually on successful completion of the examinations. Ten Albertans graduated from the above-mentioned college in 1949 and started practices in Drumheller, Stettler, Cardston, Calgary, Edmonton, Westlock, Chauvin, Leduc and Fort Saskatchewan. Other veterinarians were permitted to open offices in Claresholm, Vegreville, Sedgewick, Athabasca and Bonnyville. The placement of veterinarians is directed by the Alberta Veterinary Medical Association and their co-operation is greatly appreciated.

ERADICATION OF T.B. IN HOGS AND POULTRY

Thirty-eight percent of the hogs going through the Edmonton packing houses showed lesions of tuberculosis during 1948. Hogs are very susceptible to avian tuberculosis, which is quite widespread in Alberta. To a limited extent the disease can be spread from hog to hog in a badly infected piggery.

As the disease can be controlled by following good husbandry practices, an extensive educational campaign was initiated. This consists in sending a letter on tuberculosis in swine, accompanied by a bulletin on avian tuberculosis, to all owners whose hogs show evidence of the disease when slaughtered in an

abattoir under veterinary inspection. In the last six months of 1949 approximately 900 letters were mailed to these owners. Condemned hogs came from 4.7% of these farms.

BRUCELLOSIS (BANG'S DISEASE) CONTROL

Livestockmen are showing greater interest in determining the health status of their herds in regard to this disease. This interest is evident by the increase of diagnostic services rendered, coupled with more requests for information, and a definite support of the calfhood vaccination programs.

A. Blood Testing

This service has increased nearly 100% over the 1948 total of 13,529, with 25,258 tests being performed during 1949 in the Alberta Veterinary Laboratory.

B. Calfhood Vaccination

More evidence is accumulating every year of the value of vaccinating calves with Brucella Abortus Strain 19 vaccine to build up a resistance against brucellosis. Many ranchers and dairymen started 4 or 5 years ago having all heifer calves vaccinated that were to be kept for breeding purposes. They report that now their abortion losses are nil or practically so. Some ranchers reported 40-80 abortions yearly before a program of calfhood vaccination was adopted.

During 1949 calfhood vaccination campaigns on a municipal basis were organized. These were a co-operative effort of the District Agriculturist, Agricultural Service Boards and local veterinarians. Participating municipalities were Lacombe, Red Deer, Leduc, Wainwright, Minburn, Vermilion River, Vegreville, Wetaskiwin, Ponoka, Stettler, and around Edmonton.

The total number of calves vaccinated in 1949 was 21,000 compared to 10,000 in 1948, an increase of 110%. This increase was due to the above-mentioned campaign, more interest among livestockmen in controlling brucellosis and more practising veterinarians.

C. Educational Campaign

The principle adopted has been to give the cattle owner as much information as possible about this disease. It is felt that when the means of spread, diagnosis and prevention are more thoroughly known by these owners, the better will be their response to control measures. Therefore, every opportunity has been accepted by members of this Branch to speak at 35 various types of meetings. During 1949 between 7,000 and 8,000 livestockmen were addressed on brucellosis. Also 4,100 bulletins on the disease were distributed.

D. Brucellosis-Restricted Areas

Legislation enabling the establishment of such areas was enacted at the 1949 session of the Alberta Legislature. This calls for the testing of all cattle in the municipality, branding of reactors, quarantine of infected premises, and stringent regulations to prevent the spread of brucellosis. In municipalities

where infection is low, this is feasible at once but where there is widespread infection an extensive campaign of calfhood vaccination is urged for three or four years, to be followed by Brucellosis-Restricted Area policy by which any remaining reactors would be detected. Thus, the desired aim could be achieved with the most economical expenditure of monies.

REPORT OF THE VETERINARY LABORATORY

On the average, all types of diagnostic requests have increased approximately 100% over the 1948 totals, which a study of the following reports will show. The new facilities are greatly appreciated by everyone. Many compliments have been received by leading veterinary and agricultural officials, both in Alberta and across the Dominion, to the effect that Alberta is taking a lead in diagnostic and disease control measures. The day of guessing is past and a definite diagnosis has to be made to get maximum efficiency from the new drugs and antibiotics, as well as give fundamental information to be used as the basic foundation for disease prevention and control.

EXTENSION

The duties of the Extension Veterinarian, Dr. J. G. O'Donoghue, consist of:

1. Investigational and service trips to reported disease outbreaks, at request of Veterinary Practitioner, and to areas not adequately serviced by a qualified Veterinarian.
2. Lectures in Veterinary Science to students in Agriculture and Pharmacy at the University of Alberta.
3. Lectures in Animal Sanitation and Disease Control to students at Schools of Agriculture at Olds and Vermilion.
4. Administration of Mink Distemper Vaccine Bank.
5. Supervision and maintenance of accurate records for sponsored Mastitis and Brucellosis combined Control Programs.
6. Routine laboratory work.

INVESTIGATIONAL AND SERVICE TRIPS

During the year, a total of 234 separate investigational and service trips have been made:

Cattle	116
Fur Ranches	42
Horses	39
Swine	31
Sheep	7

234

MEETINGS ADDRESSED

Members of the Branch addressed the following meetings during 1949: Brucellosis or T.B. meetings at Marwayne, Lloydminster, Vermilion, Manville, Wainwright, Linden, Ponoka,

Athabasca, Carstairs, Crossfield, Olds; Dairy field days at Bonnyville, Lloydminster, Acme, Erskine, Benton, and Glenwood; Fur Farm field days at Lac La Biche, Roundhill, Wildwood, Seba, Slave Lake, Joussard, Canyon Creek, Faust; Brucellosis and Mastitis Program meetings at Leduc, St. Albert, East Edmonton, Linden and Drumheller; organizations—Feeders' Day, U. of A. Short Course at Calgary and Edmonton, Alberta Poultry Association, Dairy Convention, Southern Alberta Co-operative Annual Meeting, Alberta Fur Breeders' Association, Edmonton, Fur Breeders' Association Pelt Show, Live Fox and Mink Show, Red Poll Field Day, Alberta Sheep Breeders' Association, Alberta Swine Breeders' Association, Calgary Fur Breeders' Association.

RADIO TALKS

Ten separate broadcasts consisted of a general discussion of disease problems and control.

FUR ANIMALS

Ranchers in some districts of Alberta suffered serious disease losses during the year. Unseasonable high temperatures during the nursing period had an adverse effect on both kit and adult mink. The food supply was not the best; there was a definite shortage of highly essential liver, and many districts were forced to rely on frozen rations over an extended period of time. Unfortunately, the careful attention required in the storing and handling of frozen rations is not always given.

Field experiments on a very limited scale were undertaken to determine the efficacy of amino acid therapy in mink suffering from nursing sickness and other debilitating conditions, and to investigate the possibility of promoting greater growth in mink kits by the addition of small amounts of thyroprotein to the ration. Results would indicate that the oral administration of amino acid preparations to mink in a weakened condition is a valuable adjunct to recognized therapeutic measures but are not in themselves sensational curative agents as some reports would indicate. With regards to the feeding of thyroprotein to stimulate growth, a great deal more work will have to be done before the results of such a procedure can be properly assessed.

DISTEMPER VACCINE BANK

The purpose of the bank is to maintain a readily available supply of mink distemper vaccine for distemper outbreaks. It is supplied to the Fur Ranchers of Alberta at cost price. During the year, 23,880 ccs. of vaccine were supplied to 23 fur ranches. On occasion, when commercial vaccine has failed to control an outbreak, autogenous mink distemper vaccine is produced at the Veterinary Laboratory and supplied free of charge. Approximately 1,900 doses of autogenous vaccine were prepared and distributed in the year.

CATTLE

Investigational trips were concerned with sporadic disease outbreaks, requiring only individual treatment and control measures.

The herds of the University of Alberta, Olds School of Agriculture, Vermilion School of Agriculture were blood tested and all calves vaccinated for Brucellosis.

Dairy cattle purchased by the Alberta Government were tested for Brucellosis and Tuberculosis.

MASTITIS CONTROL PROGRAMS

There are several government sponsored Mastitis Control Programs available to Alberta Milk Producers. All milk samples are examined by the Provincial Dairy Laboratory. The Veterinary Laboratory is responsible for treatment recommendations, as well as the maintenance of complete and accurate records in order that results may be properly assessed and the programs adequately supervised.

1. Provincial Mastitis Program

This is a private arrangement between the herd owner and his local Veterinarian. All milk samples are examined free of charge by the Dairy Laboratory. There were 10 herds under this program during the year.

2. Edmonton Brucellosis and Mastitis Control Program

This program is available to milk shippers in Edmonton Milk Shed. The program is a co-operative effort among the Milk Producers, Distributors, Veterinarians and the Department of Agriculture. Milk samples are lifted from herds three times in a 12-month period. All infected quarters are treated and all cows blood tested for Brucellosis. The cost to the producer is a nominal Veterinary Fee and the cost of the drugs required for treatment. There were 16 herds under the program in 1948-49.

Number of herds—16.

Number of Quarter Samples	Streptococcus Infected Quarters	%	Staphylococcus Infected Quarters	%	Combined Infection	%
1st Sampling 1,288	270	20.8	74	5.8	39	3.
2nd Sampling 1,376	149	10.8	73	5.4	9	.8
3rd Sampling 536	25	4.6	34	6.3	3	.56

NOTE: Only 5 herds had been sampled for third time by December 31, 1949, which accounts for small number of samples.

3. Linden Brucellosis and Mastitis Control Program

In compliance with request of milk shippers to Linden Cheese Factory, a program similar to the Edmonton program was instituted in that district. At present 25 herds are under the program.

Number of Quarter Samples	Streptococcus Infected Quarters	%	Staphylococcus Infected Quarters	%	Combined Infection	%
1st Sampling 1,236	145	11.8	146	11.9	36	2.9
2nd Sampling 1,232	84*	6.8	100	8.1	27	2.2

* Approximately 80% of strep. infected quarters on second sampling represent new infection.

The results of these control programs have been highly encouraging. Penicillin therapy has resulted in cures in from 80% to 90% of all streptococcus infected quarters. The staphylococcus organisms unfortunately are resistant to present remedies and response to treatment occurred in approximately 30% of staphylococcus infected quarters.

In this regard, a number of herds in the Linden area are being treated on an experimental basis with staphylococcus auto-genous bacteria and toxoid in order to determine its efficacy in the control of Staphylococcus Mastitis. It must be remembered that good preventive herd management must be practised. Penicillin will cure streptococcus infected quarters but it will not prevent new infection.

HORSES

A total of 22 stallions were inspected as required by the Stallion Enrollment Act. They were animals in areas not readily accessible to private Veterinary Inspectors. All horses going to the Royal Winter Fair were inspected and vaccinated.

SWINE

All swine going to the Royal Winter Fair were inspected for Rhinitis. All premises inspected were free of the disease.

Swine Brucellosis

Brucellosis of swine is known to be quite prevalent in the U.S.A. As yet the organism has not been isolated from swine in Canada. A small project was undertaken in which samples of hog blood were collected at Gainers Packing Plant, Edmonton. All samples were subjected to the tube agglutination test and those showing any degree of a positive reaction were cultured for possible isolation of the organism. No definite positive reactions occurred and all isolation attempts were negative. On the basis of the results obtained it must be stated that it was impossible to demonstrate Brucellosis in any of the animals from which blood samples were collected. The small number of samples examined preclude the possibility of making a definite statement as to the existence of Brucellosis in swine in Alberta.

SWINE BLOOD		1/25	1/50	1/100	1/200
		Dilutions			
498		—	—	—	—
21		+ / —	—	—	—
31		+	—	—	—
7		+	+ / —	—	—
2		+	+	—	—

TISSUE SECTIONING

In June, 1949, the tissue sectioning laboratory was equipped. Personnel was not available to devote unrestricted time to this work, but nevertheless a good deal was accomplished in the six-month period. The service expands the scope of the study of diseased tissues and organs, and in the case of neoplasms and

distemper is a diagnostic procedure in itself. During the period, 195 preparations were made from 148 separate specimens.

SPECIMENS MOUNTED

Forty-three museum mounts were prepared during the year.

ANIMAL DISEASE SECTION

The services of the Animal Disease Section, in charge of Dr. G. S. Wilton, have been extensively used by those with disease problems. Almost 2,000 specimens were examined during 1949, in addition to testing over 25,000 blood samples for brucellosis. Both these figures show a marked increase over that of the previous year, 60% in animal specimens and 100% in that of blood specimens. The specimen table below shows that cattle, swine and related specimens make up more than 50% of the specimens examined. It is interesting to note, and contrary to public opinion, that over 75% of the working hours in the animal pathology laboratory are spent on cattle and swine diseases, taking into consideration, of course, the large volume of blood samples tested for brucellosis. The disease specimen table, omitting work on brucellosis, shows that the number of swine specimens examined were in the majority, followed by cattle and then mink specimens.

SPECIMEN TABLE

Species	Live	Dead	Portions	Totals
Bear	1	1	...	2
Beaver	...	2	...	2
Buffalo	...	...	4	4
Caribou	...	...	2	2
Cat	3	3	2	8
Cattle	4	10	380	394
Chinchilla	15	40	2	57
Dog	7	16	28	51
Fox	...	2	...	2
Guinea Pig	...	2	...	2
Hamster	...	1	...	1
Horse	...	...	38	38
Marten	...	1	...	1
Mink	41	241	2	284
Moose	...	...	3	3
Muskrat	...	...	2	2
Puma	...	1	...	1
Rabbit	...	8	...	8
Sheep	5	7	7	19
Swine	136	265	165	566
Blood samples	...	...	96	96
Fecal samples	...	...	21	21
Feed samples	...	...	47	47
Milk samples	...	...	292	292
Semen samples	...	...	14	14
Urine samples	...	...	28	28
water samples	...	...	19	19
Miscellaneous samples	...	...	23	23
Totals	212	600	1,175	1,987

BLOOD TESTS FOR BRUCELLOSIS (BANG'S DISEASE)—1949

	Provincial Blood Tests	%	Dominion Blood Tests	%	Total Number of Blood Tests	%
Number Positive	2,257	9.1	19	4.8	2,276	9
Number Suspicious	788	3.2	25	6.3	813	3.2
Number Negative	21,337	85.8	352	88.9	21,689	85.9
Number Broken or Hemolized	480	1.9	...	...	480	1.9
Total Number of Blood Samples	24,862	100	396	100	25,258	100

A study of the animal disease table below reveals the variety and volume of work covered. The table lists 88 diseases in 21 different species of animal.

ANIMAL DISEASE TABLE

	Bear	Beaver	Buffalo	Caribou	Cat	Cattle	Chinchilla	Dog	Fox	Goat	Guinea Pig	Hamster	Horse	Marten	Mink	Moose	Muskrat	Puma	Rabbit	Sheep	Swine	Totals
Abortion						11																11
Abscess				1		11	1	2														27
Acetonemia						8									4							8
Actinomycosis bovis						4																4
Anemia						1									8						31	40
Arsenic Poisoning						16		3													3	22
Arthritis						1															2	2
Aspergillosis						1																1
Blackleg						42																42
Bloat						3	1														1	5
Botulism						6							2									8
Breeding Difficulty						9						1									1	11
Brucella infection						18						1									2	21
Cannibalism																						3
Coccidiosis						4																4
Colic													5									5
Corynebacterium infection....						8															1	9
Cyst								1													2	3
Cystitis						1		1							3							5
Dermatitis																					2	2
Disease of Newborn						1							1							1	1	4
Disorder of C. N. S.								2														2
Distemper								2							56							58
Erysipelas																					16	16
Exhaustion from fright	2																					2
Fatty degeneration of liver....															3							3
Feline infectious enteritis					4												1					5
Food poisoning															37						1	38
Fracture						1																1
Gangrene															1							1
Gastritis and Enteritis						6	13	1		1	1		1	28			1			147		199
Goitre	2																			1		3
Hemolytic colon infection....																				25		25
Hernia																				1		1
Impaction						3	5															8
Injury								1	1						2						3	7
Intussusception																					1	1
John's Disease						13																13
Keratitis																						2
Lead Poisoning						25															5	30
Leukemia						4															3	7
Malignant oedema						8																8
Mastitis						258																258
Meningitis								1														1
Mercurial poisoning																					7	7
Metritis								3														3
Moist eczema								2														2
Necrobacillosis						11																11
Necrotic enteritis																					42	42
Nephritis						14		3					2		1						5	25
Nursing Sickness															46							46
Nutritional anemia															7							7
Nutritional disorder						9		1							6		1				11	28
Paratyphoid infection						1							1		7						15	24
Parasites (external)						2		1					1								13	17
Pasteurella infection						25														2	46	73
Peritonitis																					1	1
Plant poisoning						12							1									13
Pleurisy								1							1							2
Pneumonia						21	4	1		1					10					3	60	100
Pregnancy disease															5					1	2	8
Pseudomonas infection							14	1														15
Pyelonephritis						3															4	7
Rhinitis																					6	6
Rickets								1							6						8	15
Ringworm						2		3														5
Roundworms						1		2					4								2	13
Salt poisoning																					18	18
Scours						3															74	77
Septicaemia						8									4						1	13
Slobbers						12																12
Staphylococci infection						7		3		1											1	12
Streptococci infection						10							2						3		6	21
Streptococci and Streptococci infection						1																1
Stiff Lamb Disease																					1	1
Strychnine poisoning								7														7
Swamp Fever													11									11
Swine Influenza																					7	7
Tapeworm			1	2		3	2								6				2	2		15
Tetanus													1									1
Toxemia							3													3	1	7
Traumatic pericarditis						6																6
Tuberculosis					4	1	4															9
Tumor (benign)						11		2												2	1	16
Tumor (malignant)						8		8							1							17
Uremia						2									1							3
Urinary calculi						2									24							26

ANIMAL DISEASE TABLE

	Bear	Beaver	Buffalo	Caribou	Cat	Cattle	Chinchilla	Dog	Fox	Goat	Guinea Pig	Hamster	Horse	Marten	Mink	Moose	Muskrat	Puma	Rabbit	Sheep	Swine	Totals
Yellow Fat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	..	..	..	..	..	..	23
No evidence of disease or putrid	..	..	..	..	..	171	..	7	..	5	..	18	..	10	..	2	..	..	1	49	..	263
Miscellaneous	..	..	2	..	..	5	2	2	..	..	..	6	..	4	..	..	..	..	..	11	..	32
Feces	..	..	..	..	11	..	1	..	..	..	..	7	..	..	..	..	..	..	2	..	..	21
TOTALS	2	2	4	2	9	814	61	58	2	6	2	1	64	1	298	3	2	1	9	25	666	2,032

Hemolytic Colon Infection in Swine

Two live Yorkshire pigs, 9 weeks of age, were submitted to the laboratory, with the history that several deaths had occurred in the piggery, all animals showing the same symptoms. The intestines, heart blood, kidneys, spleen and joints from the two hogs were cultured and all plates showed a heavy growth of hemolytic colon. The cultures from the heart blood, spleen and kidney were practically pure.

Five days later, the same piggery submitted four dead pigs in the morning and six very ill pigs in the afternoon. The first lot was posted and cultured with similar results. Streptomycin was administered intramuscularly, which cleared up the infection in the three remaining animals in the sick lot. The sick pigs at the piggery, with the exception of a few controls, were treated by the veterinarian with good results.

Pseudomonas Infection in Chinchilla

Pseudomonas infection hit a small ranch of 16 chinchilla during the spring and early summer. A dead animal was submitted to the laboratory after the rancher had lost two previous cases. The remaining animals on the ranch were droopy and sickly at the time. *Pseudomonas aeruginosa* cultures were isolated from the stomach, duodenum, colon, liver, spleen and uterus. Two days after the first specimen was received two more dead animals were submitted from the same ranch and examinations revealed the same findings. Several drugs were used, while an autogenous bacterin was being prepared but the animals continued to be droopy and die off gradually until a short period of 10 days after the animals had been vaccinated with the bacterin. The bacterin set up an immunity and the rancher saved eight out of the 16 animals. A little later one litter was vaccinated by the laboratory and remained free from infection.

Chemical Poisoning

During the year, approximately 200 specimens from the animal pathology laboratory were examined for chemical poisoning, and as you will note in the table 22 specimens (cattle, swine and dog) were diagnosed as arsenic poisoning, 30 specimens (cattle and swine) as lead poisoning, 7 specimens (swine) as mercurial poisoning, 18 specimens (swine) as salt poisoning, and 7 cases of strychnine poisoning in dogs. The history behind these cases is very different and most interesting. We are indebted to J. A. Kelso, Provincial Analyst, and his associate, C. E. Noble, for the valuable chemical analyses.

POULTRY DISEASE SECTION

The work of the Poultry Disease Section, in charge of Dr. C. H. Bigland, is devoted mainly to diagnosis and investigations of poultry disease in specimens submitted by Veterinarians, Poultry Inspectors, Feed Manufacturers, Poultrymen and Farmers. With added facilities provided by the Alberta Veterinary Laboratory, more specimens can be handled efficiently. This was indicated by the increase in poultry specimens from 1,539 in 1948 to 3,535 in 1949—over 100% increase. The number of consignments rose from 825 in 1948 to 1,058 in 1949.

The following tables are a resume of the specimens handled and the conditions diagnosed during 1949:

POULTRY			1949										SPECIMENS		
MONTH	CHICKEN			TURKEY			MISCELLANEOUS			MISC SAMPLES	FEED SAMPLES	EGGS	TOTAL		
	Live	Dead	Portion	Live	Dead	Portion	Live	Dead	Portion						
January	41	29	7	4	—	—	1	—	—	—	—	—	82		
February	86	31	8	—	3	—	—	—	1	—	—	—	129		
March	64	199	8	2	31	1	—	—	—	—	6	—	325		
April	78	198	3	7	50	—	—	—	—	—	—	1	384		
May	75	154	2	8	172	—	—	—	—	—	15	—	564		
June	135	99	5	23	129	—	—	—	2	—	20	—	693		
July	64	65	2	10	47	1	—	—	—	—	9	—	332		
August	69	29	7	16	20	—	1	—	—	—	2	—	149		
September	46	26	9	7	9	—	—	—	—	—	4	—	106		
October	40	28	11	5	5	—	1	—	3	—	—	—	94		
November	25	18	10	2	3	—	—	—	2	—	—	—	313		
December	22	23	10	1	—	—	3	—	—	—	3	—	374		
TOTAL	745	899	82	85	469	7	4	10	1	497	67	669	3535		

SPECIMEN TABLE

Species	Live	Dead	Portions	Total
Chicken	745	899	82	1726
Turkey	85	469	7	561
Egg Samples	—	—	669	669
Miscellaneous Samples	—	—	497	497
Feed Samples	—	—	67	67
Geese	—	4	—	4
Canary	1	2	—	3
Pigeon	2	—	—	2
Duck	1	1	—	2
Budgerigar	—	—	—	—
Blue Finch	—	1	—	1
TOTAL	834	1378	1323	3535

The decided increase in the number of poultry specimens during 1949 does not necessarily mean an increase in the poultry diseases in Alberta. Increased awareness to disease by poultrymen and their advisors is the probable explanation. This interest in the diagnosis and control of poultry diseases is a forward policy and may have been due to the high prices of poultry products. However, it should continue even though poultry prices may be reduced because with a lowered margin of profit the inroads of disease can mean the difference between the gain of that small margin or loss of all profits.

Submission of Specimens

Many poultry specimens were received that were too badly decomposed for accurate diagnosis. Emphasis regarding the proper submission of specimens should be stressed by poultry advisors to assist in eliminating this as it brings about considerable delay in diagnosis and subsequent recommendations. Specimens should be addressed to the "Alberta Veterinary Laboratory, Department of Agriculture, Edmonton". Two or three live sick birds or freshly dead specimens packed in ice or dry ice to prevent decomposition, and including a letter giving number of birds in the flock, number dead or ill, the course and symptoms shown by the birds on the premises, feed given, and any other data deemed pertinent.

Avian Tuberculosis

Avian tuberculosis was diagnosed in 156 specimens during 1949. As in the past, it is near the head of the mortality list for poultry. The number of specimens received here gives an idea of the widespread nature of this disease and places it as one of our major poultry disease problems. Avian tuberculosis is difficult to stamp out, but it can be controlled by accurate diagnosis; de-population of the old flock and re-population with day-old chicks raised on uncontaminated ground and utilizing clean equipment.

A project has been started in an attempt to curb the high avian tuberculosis incidence in poultry and hogs. A high percentage of the tuberculosis in hogs is believed due to poultry tuberculosis.

The project is educational in nature and with the kind co-operation of the Dominion Government Veterinarians works as follows:

1. Names and addresses are obtained of hog owners whose market hogs have been found infected with tuberculosis.
2. A letter is sent to these owners to acquaint him with the fact that many hogs are infected with chicken tuberculosis, for example, by feeding chicken insides, dead chickens or allowing chickens and hogs to run together.
3. Recommendations in the form of a pamphlet on avian tuberculosis are sent to the owner to aid him in controlling the tuberculosis in his chickens, reducing the cross-infection to his hogs.

Another project is under way to educate flock owners in avian tuberculosis control. This is with the co-operation of the Poultry Branch and consists of placing large colored posters advising tuberculosis control, in hatcheries and poultry receiving stations. Pamphlets are attached to the poster so that any interested party may take a pamphlet, which gives a full description of avian tuberculosis together with control measures.

It is hoped that sufficient interest in the control of avian tuberculosis will be stimulated so as to reduce the high monetary losses caused by this disease.

Pullorum Disease

Salmonella pullorum was isolated from 104 chicks, turkey poults and adult fowl in 1949, as against 98 in 1948. Considering the great increase in total specimens, this number gives a lower percentage for pullorum than last year.

The whole blood pullorum testing of birds producing eggs for hatching conducted by inspectors of the Poultry Branch, under the direction of the Poultry Commissioner, was highly instrumental in controlling this disease.

With the active co-operation of the Poultry Commissioner and Inspectors of the Poultry Branch, several birds again were submitted giving non-specific reaction to the whole blood pullorum test. These were asked in order to co-operate with the Canadian Pullorum Conference regarding research into non-pullorum reactions. Only 15 chickens were received this year. Out of these, 11 were found to have abnormalities which could impair the health and egg production of the birds. *Salmonella pullorum* was isolated in only two out of 15 cases. Ten organisms that gave cross-agglutination with *Salmonella pullorum* antigen were isolated. Cultures of these and all *Salmonella pullorum* organisms isolated were submitted to the Ontario Agricultural College for serological typing. Forty *Salmonella pullorum* cultures were submitted. Seven of these were Intermediate forms, 33 were Standard forms of the organism. Each of these 40 cultures were obtained from separate premises.

Mention should be made that Canada leads the world in the control of pullorum disease.

NON-PULLORUM REACTION TABLE

No. of Non-Pullorum Reactors Examined	<i>Salmonella Pullorum</i> Isolated	No. Showing Abnormalities	No. from which Cross-Agglutination Organisms Isolated
1	..	..	..
1	..	1	..
3	..	2	2
2	..	2	1
1	..	1	..
3	2	3	..
1	..	1	1
3	..	1	3
3	..	1	3
15	2	11	10

Abnormalities from non-pullorum reactors; necrotic foci on liver; hemorrhagic ova; long-necked dark yellow to greenish ova; caseated ova; caseated masses in abdominal cavity.

Salmonellosis

Routine bacteriological examination revealed that 136 birds suffered from *Salmonella* infections other than *Salmonella pullorum*. Most of the isolations were made from turkey poults and baby chicks as *Salmonellosis* (Paratyphoid infection) chiefly affects young birds. The higher proportion of birds affected were turkey poults, in fact, *Salmonella* or Paratyphoid appears at the top of the list of conditions diagnosed in turkeys. This has a definite bearing on our large turkey industry, especially where day-old poults are being purchased from the hatchery instead of being home raised.

Whenever Paratyphoid was diagnosed in a consignment a culture of the causative *Salmonella* was submitted to the Alberta Public Health Laboratory for accurate serological typing. Fifty-seven separate cultures were submitted. The types of *Salmonella* identified are given below.

SALMONELLA TABLE

Type	Number
<i>Salmonella oranienburg</i>	18
<i>Salmonella typhimurium</i>	13
<i>Salmonella gallinarum</i>	10
<i>Salmonella thompson</i>	6
<i>Salmonella barielly</i>	4
<i>Salmonella senftenburg</i>	3
<i>Salmonella anatum</i>	2
<i>Salmonella newport</i>	1
TOTAL	57

These findings are of public health importance because organisms of this type have been identified as the cause of various food poisoning outbreaks in human beings.

Fowl Cholera

The *Pasteurella* of Fowl Cholera (*P. multocida*) was isolated from 21 chicken specimens and seven turkey specimens this year. Sodium sulfamethazine or sodium sulfaquinoxaline medication was suggested to reduce losses in these outbreaks. The few replies received from owners following these suggestions indicate the treatment and other recommendations were successful.

Leucosis Complex

A large number of specimens (165) were affected with leucosis. Visceral lymphomatosis was the most common form observed, followed closely by Neuralymphomatosis. Other manifestations of the leucosis complex also observed were: Osteopetrotic lymphomatosis, External Tumor leucosis, Erythroblastosis and Granuloblastosis.

Leucosis (combining all manifestations of the leucosis complex) is considered to be the major disease problem confronting the poultry industry. The disease is believed caused by a virus, believed to be transmissible through the egg. At the present time no practical cure is known nor any practical means for testing affected birds in a hatching flock. Selective breeding of leucosis resistant families appears to be the only solution in controlling losses from this condition at the present time.

Newcastle Disease [Pneumo-encephalitis]

No cases of Newcastle disease were diagnosed in Alberta in 1949. Several suspicious cases were presented, but on careful post-mortem, chemical analysis, bacteriological and virus examination these proved to be negative for the virus of Newcastle disease, the symptoms being the result of other conditions. The birds from one suspected outbreak yielded concentrations of lead in the tissues upon chemical analysis. Extreme vigilance is being observed to detect the possible presence of Newcastle disease in Alberta by Dominion Government Veterinarians, Private Veterinarians and this laboratory. This vigilance is necessary

due to the widespread presence of this disease in the U.S.A. and the ease in which it could be transmitted to this province.

Whenever Newcastle disease is suspected, the Dominion Government Veterinarians are notified. They impose a quarantine on the premises until definite diagnosis is established. Suspected birds are autopsied at this laboratory and specimens submitted to the Animal Diseases Research Institute, Hull, Quebec, by air mail for virus examination. If the virus was present in the specimen all birds on the quarantined premises would be destroyed, compensation paid for these, and other measures taken to prevent the spread of the disease to other premises.

Parasites

Body lice is a frequent parasite found on chickens and turkeys. The number of chickens found infested this year were 158, turkeys 16. In chickens the suggested control is the application of nicotine sulphate to the roosts, eight ounces per 100 feet. Individual treatment of turkeys with pinches of sodium fluoride is recommended.

Many specimens were infected with caecal worms (*Heterakis gallinae*). This parasite was observed in 130 chickens and three turkeys. Treatment suggested was general sanitation and the administration of phenothiazine nicotine powder. This worm plays an important part in the transmission of Blackhead (*Enterohepatitis*) in turkeys. The finding of caecal worms in turkeys not affected with Blackhead is rare.

The common round worm (*Ascaridia galli*) and the tapeworm (*Davainea proglottina*) and the scaly leg mite (*Cnemidoptes mutans*) were also observed in a few specimens.

Ascites and Edema in Turkey Poults

Considerable research work was carried on at this laboratory into a condition of ascites and edema or "waterbelly" observed in turkey poults this spring. Our conclusions were that: the condition was brought about by excessive intake of sodium salts from the water and feed.

A report of this work has been submitted to the Canadian Journal of Comparative Medicine for publication.

Listerella Infection [Listeria]

For the first time in Alberta the organism *Listerella monocytogenes* (*Listeria*) has been isolated from two birds during 1949. One isolation was from a canary from Calgary, the second was from a chicken originating in the Alliance district.

These findings are of importance in that humans are also susceptible to this organism in which it causes a highly fatal disease. It also suggests that the organism is present in our Alberta livestock and may be the cause of some conditions in cattle and sheep or other animals.

RADIO TALKS AND ADDRESSES

Several radio talks and addresses were given during 1949 on Poultry Diseases and related subjects.

HATCHERY FUMIGATION

With the active co-operation of the Alberta Poultry Branch some investigations were undertaken on the problem of hatchery fumigation with formaldehyde gas.

All work has not as yet been summarized, but it would appear that the fumigation concentration of Barton & Garrard of the O.A.C. (1.5 c.c. formalin and 1 gm. potassium permanganate per cubic foot, with 20-minute exposure at 86° wet bulb reading) was effective in killing large numbers of pullorum and other organisms when properly applied. Also that this concentration appeared to have no effect on the embryo even when repeated five times during hatching process.

REPORT OF FUR FARMS BRANCH
FUR FARM SUPERVISOR—D. R. FRASER

GENERAL

The year 1949 was a particularly difficult and depressing time for the fur farmers. The upset fur markets during the early months, when thousands of pelts were sold at less than production costs, left many ranchers in serious financial difficulties. A number were faced with the prospect of carrying their herds through until pelting time without sufficient money to do so properly. As a result, further reductions of breeding stock had to be made and the fur farmers themselves were forced to seek outside employment to obtain funds to carry them through the year.

With the slightly improved market at the year end there is once again a note of optimism amongst the ranchers that have had such a difficult struggle through 1949. It is fortunate for the industry that the men engaged in fur farming have the perseverance, courage and optimistic outlook they have, otherwise ranch raised furs would gradually disappear from the fur markets and the dwindling supply of wild furs would not be sufficient to meet the requirements.

STOCK:

The following fur-bearing animals are being successfully raised in captivity on Alberta fur farms:

Beaver	Marten
Chinchilla	Mink
Fitch	Nutria (South American Beaver)
Foxes	Rabbits

At the present time, mink, fox, chinchilla, marten and beaver are the most popular types of fur-bearing animals raised in this province. The other types are not in popular demand and consequently anyone raising them is doing so on an experimental basis.

Although beaver farms come under the jurisdiction of the Game Branch, it is interesting to note that at Wildwood, Alberta, a Mr. Wm. Benesch has developed a large-scale beaver farm and has succeeded in raising several litters of beaver in pens. The general health, size and fur quality of the pen-raised beaver compares very favorably with those raised in his 22-acre beaver colony.

The chinchilla industry has been quite active during 1949. To date the activity has been confined to the promotion and sale of breeding stock, for as yet a definite market has not been established for the pelts.

It should be mentioned in passing that the rabbit industry is gradually developing. There is an ever-increasing demand for rabbit meat for human consumption and a ready market for top quality pelts. It is anticipated that within the next few years we will see some extensive developments in this field in Canada similar to those that have already taken place in the United

States. Commercial rabbit raisers have found several opportunities for making money, depending upon their individual initiative, ability and aggressiveness in building a market, e.g., 1. Sale of meat; 2. Breeding stock; 3. Animals for laboratory use; 4. Fur, wool and fertilizer; 5. Animals for Junior Farm and Home Clubs.

THE FUR MARKET:

From January to June of 1949, very unsettled fur market conditions prevailed and difficulty was experienced by the marketing houses in disposing of both mink and fox pelts, except at extremely low prices.

Although the market for fox pelts remained unchanged in 1949, the mink market showed signs of improvement during the months of July, August and September, due mainly to the fact that the manufacturers commenced purchasing pelts for their fall fur coat requirements. By the end of October the fur auction houses reported that their mink stocks were cleared out and they had a backlog of unfilled orders.

The first major mink sale for the 1949 season pelt crop was held in Montreal on December 1. As compared with the 1948 season opening levels, prices on standard mink showed an advance of from 25% to 30%. As the year ends the keen interest displayed by the buyers during early December is lacking now that the backlog of orders has been filled and there is a reported decline of from 5% to 15% from the beginning of the month sales.

December weather conditions in the large eastern centres, where temperatures have ranged from 48° to 67° above zero, have greatly influenced the fur garment sales, and unless with the return of colder weather the consumers display more buying interest in manufactured garments there is every indication that during the early months of 1950 the market will show a further decline.

The following analysis of one of the major sales held the early part of December in Montreal gives a good picture of what an important part the production of top quality pelts plays in the successful operation of a fur farm and of how few pelts there are in the top quality bracket.

Skins	%	Price Ranges
70	.3	\$26.50
825	3.3	From \$24.00 to \$25.50
2,019	8.1	" 22.00 to 23.50
2,592	10.5	" 20.00 to 21.50
3,390	13.6	" 18.00 to 19.75
3,432	13.8	" 16.00 to 17.75
5,782	23.3	" 14.00 to 15.75
5,380	21.6	" 12.00 to 13.75
1,278	5.1	" 10.00 to 11.75
80	.4	\$9.00
24,848	100 %	

BREEDING STOCK:

The quality of the breeding stock kept by Alberta fur farmers in all types of fur-bearers is gradually improving each year. Possibly this is due largely to the fact that the depressed

fur market has made the fur farmer realize the futility in producing poor quality and inferior type pelts. However, another contributing factor to the improvement of quality is the extensive educational program in the way of Field Days, Pelt Shows, Live Animal Shows and Meetings conducted jointly by the Alberta Fur Breeders' Association and this Branch.

FEED SUPPLY

HORSE MEAT:

The supply of horse meat during 1949 was adequate to meet the demand throughout the province. A substantial reduction of \$2.00 per cwt. was made by the majority of suppliers and, needless to say, that this reduction in itself assisted the over-burdened fur farmers greatly.

FISH:

Several types of fish were used on Alberta fur farms to supplement the dwindling supply of Northern Tullibee, e.g.:

Coast Fish—Consisting of B.C. cod, haddock and sole trimmings, ground and frozen in 50-pound blocks, was available throughout the province at \$4.75 per cwt. f.o.b. Calgary and Edmonton.

Manitoba Tullibee—The Fisheries Prices Support Board at Winnipeg supplied several carloads of frozen tullibee to Alberta fur farmers at \$1.50 per cwt. in carload lots f.o.b. Winnipeg. These fish made excellent feed for mink, and as it happened the demand exceeded the available supply.

Burbot "Maria"—During the late winter and early spring months the fur farmers of Lac La Biche were permitted to fish for Marias. The catches of this type of fish were quite heavy and assisted greatly in enabling many of the ranchers in that district to carry on. Developments in this area are being watched closely as the estimated over-all average mink production at Lac La Biche of 3.9% is higher than most districts, and many of the ranchers attribute this to the feeding of Maria and Maria livers. One year's test feeding is not sufficient to warrant drawing any definite conclusions, but the situation will bear close observation.

FUR FARMING AS AN AID TO AGRICULTURE:

It is estimated that Alberta fur farmers use about 9,500 old horses each year for feed. These horses have outlived their usefulness and are of no more value to the farmer, who now receives top market prices for these horses that would otherwise sell for very little. In addition, it is estimated that each year the fur farmers of this province use about 150 tons of dried milk, 170 tons of alfalfa meal, 925 tons of steamed and toasted wheat, oats and bran, 2,000 tons of marsh hay, 6,000 dozen blood spot eggs, several hundred tons of tomato pulp, and many other items produced on the farm.

In many cases fur farms are located on poor, unproductive land, thereby producing tax money for the province from farms from which otherwise very little if any taxes would be collected.

EXTENSION

FIELD DAYS:

Live Fox and Mink Field Days were held at the following points:

Round Hill	—	October	19
Wildwood	—	"	20
Seba	—	"	21
Joussard	—	"	25
Lac La Biche	—	"	28
Red Deer	—	"	31
Medicine Hat	—	November	2
MacLeod	—	"	4
Calgary	—	"	5

Due to several outbreaks of disease in the Lesser Slave Lake area meetings were held instead of the usual field days at Slave Lake, Faust and Canyon Creek.

The field day attendance and entries were very good in all districts, with from 60 to 184 entries submitted for grading at each point. This season as a trial the field day prize ribbons were dispensed with and a grading card used. This new system met with the approval of all fur farmers and they requested that it be continued at future field days.

Dr. E. E. Ballantyne, Director of Veterinary Services, arranged that either he or Dr. J. O'Donoghue, the Extension Veterinarian, would be in attendance at the Field Days in the outlying districts where no veterinary service is available. Their instructive vaccinating demonstrations and talks were highly appreciated by all those attending both meetings and field days.

SHORT COURSES:

In February and March of 1949 Fur Farming Lectures were given to students at the Vermilion and Olds Schools of Agriculture. These courses will be conducted again in 1950 at both schools.

FUR FARMING LITERATURE:

The following bulletins were issued by this branch during 1949.

- "Sanitation on the Fur Farm."
- "Notes on Feeding Foxes and Mink."
- "Pelting Time."

FUR BREEDERS' ORGANIZATION:

The Alberta Fur Breeders' Association was particularly active during the year 1949. From all reports this organization is one of the most progressive in the Dominion of Canada and their activities are watched with interest by both Canadian and American Associations.

During 1949 the Fur Farm Supervisor acted on the Meeting and Entertainment Committee of the Edmonton Fur Breeders' Association and on the Publicity and Show Committee of the Alberta Fur Breeders' Organization. Speakers, films and entertainment were provided for eleven Edmonton meetings and special meetings at Calgary, Lac La Biche, Canyon Creek, Faust, McLeod and Medicine Hat.

Assistance was given in organizing and presenting the following Alberta Ranch Fur Promotions during the year.

"Fur Fashions of 1949"	Edmonton	January 1949
"Annual Pelt Show"	Edmonton	January 1949
"Alberta Ranch Fur Week"	Province wide	January 1949
"Ranch Fur Display"	Edmonton Exhibition	July 1949
"Annual Live Animal Show"	Edmonton	November 1949
"Fur Fashions of 1950"	Edmonton	December 1949



Window Display in Edmonton Store During Ranch Fur Week

INSPECTIONS OF FUR FARMS:

The fur farm inspection service was extended considerably during 1949 as this branch was fortunate in obtaining for the months of July, August and September the services of Mr. H. W. Sutherland of the Olds School of Agriculture to assist with this work. Fur Farm Inspections were made during the year in the following districts:

Alix	Hillcrest	Plamondon
Bassano	Hubalta	Pollockville
Brooks	Innisfail	Priddis
Calgary	Joussard	Red Deer
Canyon Creek	Kavanagh	Rocky Mountain House
Camrose	Kinuso	Round Hill
Chigwell	Lac La Biche	Seba
Chip Lake	Lacombe	Slave Lake
Clive	Lamont	Stettler
Craigmyle	Langford Park	Strathmore
Delburne	Lethbridge	Trochu
Drumheller	Macleod	Turin
Edmonton	Magrath	Wabamun
Elnora	Medicine Hat	Wetaskiwin
Entwistle	Midnapore	Widewater
Faust	Northville	Wildwood
Gainford	Olds	
Granada	Picture Butte	

PELT SHOW:

The annual Mink and Fox Pelt Show was held on January 10, 11 and 12, 1949, in the Massey-Harris Show Room in Edmonton. Four hundred and ninety-nine exhibits were entered

for judging. The judge of the mink classes was Mr. Norman L. Boyd of Little Brothers' Fur Sales Agency Ltd., Vancouver, B.C., and Mr. John Keith of the Edmonton Fur Auction Sales, handled the judging of the fox pelts.

LIVE ANIMAL SHOW:

The twelfth successive annual show was held at the Edmonton Exhibition Association Livestock Sales Pavilion. The number of exhibits totalled 418 mink, 52 foxes, 54 chinchilla and 4 beaver.

This year members of the Chinchilla Breeders' Association were invited to exhibit and they loaned their whole hearted co-operation and assisted in making the show a success.

Judges were as follows:

Mink—N. L. Boyd, Vancouver.

Foxes—G. W. Harris, Montreal.

Chinchilla—E. Gunther, Ottawa.

Entries were received from practically every district in the province.

HEALTH:

As a general rule the majority of Alberta Fur Farmers experience little difficulty with sickness amongst their fur-bearers. However during 1949 a serious situation was encountered in the Northern Lake Area and has been the cause of grave concern. The mink losses were very heavy and some reports show that ranchers lost as high as 60% of their 1949 mink crop. The cause of the trouble is somewhat obscure at present other than that poor refrigeration of fish is a contributing factor. Ranchers have been urged to have their freezers checked and adjusted as it would appear that those fur farmers able to fast freeze and hold their supplies around 0° to 4° above have not been troubled to any great extent.

Unfortunately mink herds that are not in top shape are more susceptible to distemper, as a result some of the fur farms that suffered kit losses during the summer months have had distemper outbreaks in the balance of their herds.

MINK DISTEMPER VACCINE INSURANCE:

The unsettled fur market conditions of late 1948 and early 1949 left many Alberta Fur Farmers without any or very little in the way of emergency cash reserves.

Consequently several of the ranchers whose herds contracted distemper found it necessary to mortgage their homes and other property in order to raise funds with which to buy Distemper Vaccine to protect their investments.

In order to overcome this difficulty in future years it was felt that an insurance scheme whereby funds would be available to purchase vaccine in the event of an outbreak would aid the situation. A proposal was suggested to an Edmonton insurance firm representing one of the larger companies and they have tentatively agreed to issue a policy to pay the cost of mink vaccine (three doses \$1.02 per mink) in the event of an out-

break of the disease being diagnosed by the Veterinary Laboratory. The premium rate for the first year would be 10c per mink on hand at July 1st and would have to be paid or guaranteed on an association basis with at least a 75% coverage of its members.

This proposal has now been placed in the hands of the Alberta Fur Breeders' Association for their consideration, and it is to be hoped that they see fit to investigate thoroughly the possibilities of the scheme as there is no doubt but that a policy of this nature would greatly assist many in the fur industry.

FUR FARM STATISTICS FOR YEAR ENDING AUGUST 31st, 1949
Number of Animals Declared on Fur Farms in Alberta 1948-49

Kind of Animal	Total No. Of Animals	Av. Value Per Animal Sept. 1/48	Total Valuation
Fox, Silver	5,886	\$ 21.89	\$ 128,844.54
Fox, White Marked Silver	2,416	19.96	48,223.36
Fox, Platinum	3,970	25.25	100,242.50
Fox, Pearl Platinum	1,593	24.75	39,426.75
Fox, Pearlatina	64	25.00	1,600.00
Fox, Glacier Blue	125	37.50	4,687.50
Fox, Arctic Blue	456	16.90	7,706.40
Fox, Cross	72	13.50	972.00
Mink, Standard	168,475	16.58	2,793,315.50
Mink, Platinum	45,919	20.40	936,747.60
Mink, Breath of Spring Platinum	796	40.00	31,840.00
Mink, Pastel	2,534	38.00	96,292.00
Mink, Breath of Spring Pastel	178	39.50	7,031.00
Mink, Aleutian	207	65.00	13,455.00
Mink, Arctic	16	67.25	1,076.00
Mink, Sapphire	6	1,000.00	6,000.00
Mink, White	593	22.50	13,342.50
Mink, 95% White	3,333	18.82	62,727.06
Mink, Black Cross	3,823	7.90	30,201.70
Mink, Silver Sable	2,456	7.90	19,402.40
Mink, Others	807	6.25	5,043.75
Marten	127	58.00	7,366.00
Chinchilla	634	58.00	36,772.00
Fitch	73	4.00	292.00
Nutria	9	3.50	31.50
	244,568		\$4,392,639.06

Number of Animals Pelted on Fur Farms in Alberta 1948-49

Kind of Pelt	Total No. of Pelts	Av. Value Per Pelt Fall 1948	Total Valuation
Fox, Silver	3,543	\$ 12.10	\$ 42,870.30
Fox, White Marked Silver	1,623	12.10	19,638.30
Fox, Platinum	2,583	16.50	42,619.50
Fox, Pearl Platinum	1,162	14.00	16,268.00
Fox, Pearlatina	34	16.20	550.80
Fox, Glacier Blue	37	13.50	499.50
Fox, Arctic Blue	294	12.00	3,528.00
Fox, Cross	37	6.25	231.25
Fox, Red (stale pelt)	1	3.75	3.75
Mink, Standard	115,666	10.50	1,214,493.00
Mink, Platinum	29,554	14.20	419,666.80
Mink, Breath of Spring Platinum	243	28.00	6,804.00
Mink, Pastel	637	24.00	15,288.00
Mink, Breath of Spring Pastel	63	26.00	1,638.00
Mink, Aleutian	33	40.00	1,320.00
Mink, Arctic	Nil		
Mink, Sapphire	1	150.00	150.00
Mink, White	402	15.20	6,110.40
Mink, 95% White	1,991	12.00	23,892.00
Mink, Black Cross	3,096	4.80	14,860.80
Mink, Silver Sable	1,446	4.90	7,085.40
Mink, Others	370	5.25	1,942.50
Marten	18	36.00	648.00
Chinchilla (unsold)	7	—	—
Fitch	2	2.70	5.40
Nutria	Nil		—
	162,843		\$1,840,113.70

Number of Animals Retained for Breeding Stock in Alberta 1948-49

Kind of Animal	Total No. Of Animals	Av. Value Per Animal Dec. 31/48	Total Valuation
Fox, Silver	2,341	\$ 25.17	\$ 58,922.97
Fox, White Marked Silver	793	21.86	17,334.98
Fox, Platinum	1,387	29.03	40,264.61
Fox, Pearl Platinum	431	28.45	12,261.95
Fox, Pearlatina	30	28.75	862.50
Fox, Glacier Blue	88	41.25	3,630.00
Fox, Arctic Blue	162	17.75	2,875.50
Fox, Cross	35	13.50	472.50
Mink, Standard	52,511	19.05	1,000,334.55
Mink, Platinum	16,171	21.42	346,382.82
Mink, Breath of Spring Platinum	551	44.00	24,244.00
Mink, Pastel	1,375	45.00	84,375.00
Mink, Breath of Spring Pastel	115	47.00	5,405.00
Mink, Aleutian	174	65.00	11,310.00
Mink, Arctic	16	67.25	1,076.00
Mink, Sapphire	5	1,000.00	5,000.00
Mink, White	185	24.75	4,578.75
Mink, 95% White	1,342	20.70	27,779.40
Mink, Black Cross	716	7.90	5,656.40
Mink, Silver Sable	1,004	10.00	10,040.00
Mink, Others	435	6.25	2,718.75
Marten	105	60.96	6,394.50
Chinchilla	545	95.00	51,775.00
Fitch	71	4.00	284.00
Nutria	9	3.50	31.50
	81,097		\$1,724,010.68

Number of Live Animals Exported from Alberta 1948-49

Kind of Animal	Total No. Of Animals	Av. Value Per Animal	Total Valuation
Fox, Silver	2	\$ 35.00	\$ 70.00
Mink, Standard	298	30.00	8,940.00
Mink, Platinum	194	32.00	6,208.00
Mink, Breath of Spring Platinum	2	50.00	100.00
Mink, Pastel	22	50.00	1,100.00
Mink, White	6	30.00	180.00
Mink, Black Cross	11	15.00	165.00
Mink, Silver Sable	6	15.00	90.00
Mink, Glacier Blue	2	15.00	30.00
Marten	4	65.00	260.00
Chinchilla	82	125.00	10,250.00
	629		\$27,893.00

Fur Farm Licenses 1948-49 Season

Fox	65
Mink	1,246
Fox and Mink	79
Marten	2
Fitch	5
Nutria	2
Chinchilla	33
	1,437

REPORT OF APICULTURE BRANCH

W. G. le MAISTRE, Provincial Apiarist

Alberta remains the second largest honey producing province, with a total honey crop of 5,800,000 pounds for 1949.

This production is 37% less than the previous year's record of 9,000,000 pounds. Two factors contributed to the smaller crop. The most significant factor was a reduction in the number of colonies operated. These were reduced to 55,000, a drop of 22% from the 70,200 operated in 1948. The other factor was a lower yield per colony; 106 pounds this year compared to 129 pounds in 1948—a reduction of 18%.

A lessened demand for honey, a carryover from the 1948 crop, the high cost of supplies and operating have all been factors contributing to the above noted decline in colonies.

One other significant point in the tables given below is that though the number of beekeepers declined from 6,700 in 1948 to 5,000 in 1949—26%—the number of colonies only declined by 22%. There is an apparent trend for the smaller operator to go out of beekeeping but for others to operate a larger number of colonies. In 1943 the average number of colonies per beekeeper was only 5.6, whereas in 1949 this figure was 11. This is a trend that can be expected to continue as commercial operators become better established.

A readjustment in beekeeping is taking place. Difficult production and marketing problems are being encountered for the first time by many Alberta beekeepers. The marketing problems seem to be in process of solution but great improvements in production economies are still to be instituted by the majority if they are to survive as a separate class of producers.

There seems to be sufficient evidence that beekeepers would be justified in deriving revenue from the pollination for which their bees are responsible.

STATISTICS:

	Total Production '000 pounds		Average Net Price per pound		Value in '000 Dollars	
	1948	1949	1948	1949	1948	1949
Honey	9,043	5,800	11	10	995	580
Beeswax	118	82	35	30	40	24
					1,036	604

	1948	1949	% Change
No. of Beekeepers	6,700	5,000	- 26
No. of Hives	70,200	55,000	- 22
No. of Hives per Beekeeper	10.4	11	
Average production per hive (lbs.)	129	106	- 18

GENERAL:

No survey on the cost of production was conducted, however, the only factor that changed was the cost of imported package bees. This item was about 15% less than in 1948. Prices of package bees ranged from approximately \$5.00 per two pounds to \$7.00 per three pounds laid down in Alberta.

There was a slight increase in percentage of colonies wintered during 1948-49 over the previous year—15% compared to 13%. This is attributed to the high cost of imported bees.

The over-wintered loss was very much less than in any previous year recorded—28% compared to an average winter loss of over 40% of the colonies.

This Branch has demonstrated methods of wintering bees and is hoping to be able to recommend a simplified procedure that will encourage this practice.

SEASON:

April and early May were not good periods for building up colonies. Cool weather and intermittent frosts retarded flight and restricted bloom. Late May and June brought on a fairly good flow of nectar and colonies built up well. This period, however, was very dry and resulted in a very brief main July honey flow from the clover. Rain during the middle of July resulted in an unusually good August flow.

Southern Alberta and the Peace River district had more extreme conditions. It was too dry in the south. Some August frosts interfered with the flow in parts of the North, though there had been ample rain.

MARKETING:

A greatly improved movement of honey was in evidence during the latter half of 1949. Almost all the 1948 carryover was sold and a fair proportion of the 1949 crop was moved.

Beekeepers assessed themselves to provide an advertising fund. A campaign seemed to increase the demand for honey. The Dominion Government purchased three and one-half million pounds of the 1948 carryover.

The wholesale price netted the beekeeper on the average close to 10 cents per pound for his honey.

DISEASE CONTROL:

Ten inspectors were active under the Bee Diseases Act. The most advantageous time for inspection is brief, being during June and early July, and though special conditions make it necessary to inspect and regulate at other times, most of the work is concentrated into that period.

	1948	1949
No. of hives inspected	11,521	7,240
No. of Apiaries inspected	1,008	1,112
No. of hives diseased (AFB)	526	1,315
Diseased hives % of total	.74	2.4

The amount of disease has increased considerably during the past year. It is quite widely distributed throughout the province, with major outbreaks occurring in the Edmonton, Westlock and Peace River districts. Other colonies have been infected at Tilley, Gem, Lethbridge, High River, Lacombe, Whitecourt and Athabasca.

This Branch maintains a diagnostic service. Samples of suspected disease are examined, the sender advised of results and treatment for affected colonies is recommended.

	1948	1949		1948	1949
American Foulbrood	29	65	Sacbrood	1	2
European Foulbrood	11	17	Not disease	9	18

Annual registration of beekeepers is required for purposes of controlling disease.

	1948	1949
No. of beekeepers registered	5,000	2,500
No. of beekeepers not registered	1,700	2,500
No. of hives registered	52,000	27,800
No. hives not registered	18,000	27,200

This Branch designed and constructed a unit with which to render wax from the combs and to cleanse diseased bee equipment. Although sterilization cannot be guaranteed, this unit is expected to give satisfactory results against re-infection as well as save the equipment which otherwise would have to be destroyed by fire.

The unit will be run under the supervision of this Branch and used in any area where a large outbreak of disease has occurred. Small, isolated outbreaks of disease will be destroyed by fire as has been the practise in the past.

EXTENSION:

Field days, short courses and meetings were held in a number of places. This Branch provided speakers on 41 such occasions during the year.

Bulletins and correspondence supply information that is requested. Six broadcasts on beekeeping were made over CBX and seven over CKUA.

Agricultural notes of special significance to beekeepers were released periodically during the year.

BEEKEEPERS ORGANIZATION:

The Alberta Beekeepers' Association is an affiliation of several local beekeepers' associations. The Provincial Apiarist is secretary-treasurer and thereby remains in close contact with the industry.

INVESTIGATIONS:

1. Further investigations into what seemed to be a diseased condition of two apiaries in the Winfield district as reported last year were made.

An organism distinct from those commonly affecting colonies was observed under the microscope. Thereupon samples of dead larvae were taken and cultured at the laboratory and at Ottawa by Science Services. Dr. H. Katznelson believed this organism to be previously unidentified and named it *Bacillus pulvificiens*.

Isolation of this organism was completed too late in the season to permit further work. Suspensions prepared from pure cultures failed to reproduce the disease in healthy colonies, but suspensions made from dead larvae did reproduce the disease.

2. Sterilization of equipment from colonies affected with American foulbrood. From a practical point of view ordinary sterilizing processes are either not effective or too destructive

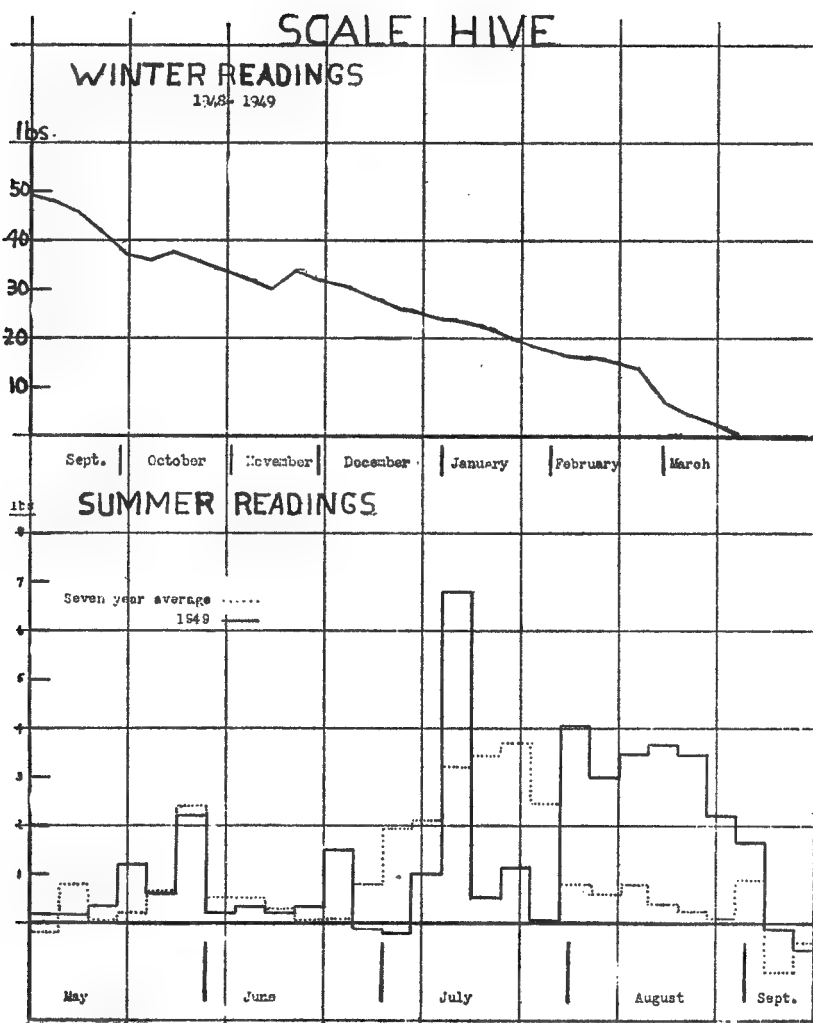
of bee equipment. Tests were made to devise a system that would treat such equipment reasonably effectively and salvage much of what at present is destroyed with fire.

- (a) Flowing steam. Treatment for 30 minutes gave growth.
- (b) Steam under pressure. Growth obtained after 17 pounds pressure was used for 15 minutes.
- (c) Lye solutions. Treatment in boiling lye solutions (3%, 5%, 10%) for 10 minutes. No growth.

3. Wintering: A method of wintering bees in cardboard cartons, which has seemed effective and practical in small-scale tests, is being tried with 300 colonies located near Brooks, Red Deer, Edmonton and Flatbush. Four beekeepers are co-operating by supplying the colonies, labour and materials.

4. Hybrid Queens: An attempt was made to compare hybrid stock with the commonly used Italian and Caucasian strains. It was impossible to secure the hybrid queens in time to make comparisons of significance. Italian queens were mated to Caucasian drones and Caucasian queens mated to Italian drones and were tested. We had hybrid worker bees in the colonies under observation. There was no significant difference between these colonies and the standard commercial strains against which they were tested.

5. Scale Colony: The accompanying graphs have been made up from records kept on a hive maintained on a scale throughout the year in Edmonton. One shows the 1949 honey flow compared to the average derived from seven years' records. The other shows the rate at which the colony consumes stores during the period when no honey flows are available.



GRAPH SHOWING SEVEN YEAR AVERAGE AND 1949 HONEY FLOW
FOR CITY OF EDMONTON

REPORT OF SCHOOLS OF AGRICULTURE BRANCH

R. M. PUTNAM, Superintendent, Schools of Agriculture

N. N. BENTLEY, Principal, Vermilion School of Agriculture

C. E. YAUCH, Principal, Olds School of Agriculture

GENERAL

The Schools of Agriculture enjoyed another successful year during 1949. A total of 191 diplomas were issued at the closing exercises in April to students who had successfully completed the courses in Agriculture and Home Economics.

	Olds	Vermilion	Total
Diplomas in Agriculture	73	59	132
Diplomas in Home Economics	30	29	59
	103	88	191

Two important changes in the administrative personnel of the Schools occurred during the year. On April 6th Mr. C. E. Yauch, B.Sc., was appointed as Principal of the Olds School, succeeding Mr. F. N. Miller, who resigned. Mr. Yauch assumed his new position after many years of experience as an instructor on the staff.

The Deputy Minister of Agriculture, Mr. O. S. Longman, who had acted as Superintendent of Schools of Agriculture as well since the retirement of Mr. S. H. Gandier, relinquished the latter duties on June 1st to the present Superintendent.

The 1945 report of the Department of Agriculture contained an historical review of the Alberta Schools of Agriculture, which will be supplemented to some extent in the present report.

The original purpose and function of the Schools of Agriculture and Home Economics was to educate and train young people for rural life. The course in Agriculture was designed to train boys to be farmers and the course in Home Economics was organized to prepare girls for homemaking. Throughout the years of their operation the Schools have maintained these objectives, and they are still striving to that end.

As agriculture and rural living developed the courses have been adjusted to meet changing conditions. For instance, there is more time given now to Farm Mechanics than was devoted to the subject in the days when horses provided the power. Girls in Home Economics now study consumer problems and buymanship to a greater degree than in the days when household appliances were limited in number. Notwithstanding these developments, the core of the courses is still agriculture and homemaking.

An analysis of the time devoted during the regular two-year course to the subject matter of the courses in Agriculture and Home Economics indicates the following division:

AGRICULTURE	
Subject	Percentage
Field Husbandry (Soils, Crops, Horticulture)	18.2
Livestock (including Dairying, Poultry, Beekeeping and Entomology)	28.8
Farm Mechanics (including Motors, Machinery, Buildings and Metal Work)	23.3
Academic Subjects (English, Mathematics and Science)	21.6
Economics and Management (including Community Organization, Economics and Co-operation and Farm Management)	5.6
	97.5
HOME ECONOMICS	
Subject	Percentage
Nutrition (Foods and Cooking)	18.7
Sewing (including Clothing, Textiles, Handicrafts, Laundering)	23.3
Home Management (including Home Nursing and Household Mechanics)	15.1
Agricultural Subjects (Horticulture, Dairying, Poultry)	15.0
Academic Subjects (English, Mathematics, Science)	21.6
Economics (Community Organization, Economics and Co-operation and Social Relations)	3.8
	97.5

The regular course in Agriculture and Home Economics has persisted in its original form, that is, two consecutive winter terms extending from late in October to early in April. For several years a third-year course was offered to allow students to complete their matriculation requirements. When this course was discontinued a two-in-one course was initiated. The latter course is open to students who have completed at least 70 of the required 105 High School Credits. The two-in-one course runs concurrently with the regular course. Since students in the two-in-one course have 70 High School Credits they are excused from taking the academic subjects and devote their time exclusively to Agriculture or Home Economics as the case may be. The content of these subjects for the two-in-one classes is a composite of that given in the first and second year of the regular course. The two-in-one students participate in all School and student life on the same basis as regular students. The two-in-one class is usually slightly older on the average than other new students, and contains a larger percentage of town and city students. Some of the latter attend a School of Agriculture to complete their matriculation requirements for entrance to the Faculty of Agriculture at the University, and at the same time gain some training and experience in the agricultural field.

It is interesting to note a certain progression in the Department's services for rural youth. For instance, 45% and 41% of the students enrolled in Agriculture and Home Economics respectively at Olds in the 1949-50 term were former Junior Club members. A large percentage of the classes at Vermilion have a similar background. Each year an appreciable number of the graduates of the Schools enter the University.

SUMMER PROGRAM

Summer activities at the Schools were as large or larger than in previous years. From the last week of June until the first

week of August a continuous series of events took place. Most of these events are related to the Department's services for rural youth, but some are for adults only. Besides the activities that are part of some Departmental program, the facilities of the Schools were used by many other agricultural groups for meetings, field days and other events.

Certain staff members remain at the School throughout the year and assist during the summer courses. Others spend a portion of the summer at the School and the balance of the time performing various duties for other Branches of the Department. It is hoped that a closer working relationship can be established between the Department's activities and programs with rural young people and the Schools of Agriculture. There would be considerable merit and value in combining rather closely the services which the Department carries on in the interests of rural youth.

Details of the summer program and staff activities will be found in the Principals' reports.

EXPANSION OF FACILITIES:

Construction of a new Agricultural School at Fairview was begun in September. Due to an open fall good progress was made and by freeze-up three houses, four barns, a mechanics' building and a livestock pavilion were sheeted in and partially completed. It is not anticipated, however, that work will be finished in time to begin classes in 1950. The Fairview School is being built to accommodate one hundred students, but can be expanded if necessary.

No new buildings were erected at Olds or Vermilion, but several improvements and additional services were provided. The extension to the auditorium and central heating system at Olds were the most important alterations. At Vermilion several minor changes and alterations were made, including shingling the mechanics' building.

SCHOOL FARMS:

The only important event during the year was the transfer of the Aberdeen-Angus herd from Olds to Fairview. This transfer took place in November, when 19 head were shipped to Fairview and housed in old buildings on the property pending completion of the new barns in the spring.

Poor crops were harvested at Olds and Vermilion, making it necessary to purchase not only feed grain, but some fodder as well. A fair crop was harvested at Fairview. On all the farms practices are being adopted that will exemplify good farming and soil conservation.

1949-50 TERM:

The enrolment at Olds and Vermilion for the 1949-50 term totalled 379 students, which is divided as follows:

DEPARTMENT OF AGRICULTURE

Agriculture—	Olds	Vermilion	Total
First Year	56	61	117
Second Year	40	39	79
Two-in-One	28	28	56
	124	128	252
Home Economics—			
First Year	31	32	63
Second Year	19	16	35
Two-in-One	16	13	29
	66	61	127
TOTALS	190	189	379

Once again it was necessary to refuse applications from younger boys because of lack of accommodation. Approximately sixty applications were refused from boys, but in the case of girls all were accepted. The popularity of the Schools is not diminishing, but in recent years there have not been as many applications from girls as is desirable. On the average, there are two boys for each girl attending the Schools. A more equal distribution would seem desirable. It has been suggested that the course in Home Economics might be changed to provide a training for girls that would fit them for some form of employment instead of the vocation of homemaking. When the Fairview School opens the facilities will be enlarged considerably.

BOARD OF AGRICULTURAL EDUCATION

The Board of Agricultural Education held its annual meeting on June 28th, when all members were present. Among matters considered were a progress report on the Fairview School, agricultural education in intermediate and high schools, and the relationship of the Schools of Agriculture and Composite High Schools to the University of Alberta. All members of the Board of Agricultural Education were keenly interested in the developments taking place in the province to provide vocational training for the future farmers and homemakers.

OLDS SCHOOL OF AGRICULTURE

THE 1948-49 YEAR

The 1948-49 term was brought to a close on the evening of April 5, 1949, with the presentation of 103 diplomas to the graduates by Mr. F. N. Miller, Principal. Honourable David Ure, Minister of Agriculture, gave the address to the graduates, and Mr. O. S. Longman, Deputy Minister of Agriculture, presented the prizes. Mr. Jack Middleton of Nanton was valedictorian.

CLASSIFICATION OF GRADUATES

	Second Year	Two-in-One
Home Economics	13	17
Agriculture	40	33

During the term several officials of the Department of Agriculture visited the School for a single lecture or a series of lectures. The officials were: Dr. J. G. O'Donoghue, W. G. leMaistre, D. H. McCallum, W. H. T. Mead, D. R. Fraser.

Dr. C. K. Johns of the Central Experimental Farm, Ottawa, was a visitor for a day.

Dan McCowan, Banff naturalist, gave an illustrated lecture at one of the literary programs.

R. H. Painter, Science Service Laboratory, Dominion Department of Agriculture, Lethbridge, spoke to the students one evening on Entomology.

A. W. Loughheed, Nagatuck Chemicals representative, spoke to the students one afternoon on chemical weed control.

SCHOLARSHIPS AWARDED AT THE OLDS SCHOOL OF AGRICULTURE, APRIL 1949

Scholarships from the Alberta Surplus Wheat Board Money Trust:

- (a) Scholarships of \$100.00 each to members of the graduating class tenable at the University of Alberta—
 Agriculture: R. Arthur Reddon, 1104 Bellevue Avenue, Calgary;
 Glen Morrison, High River; Gerald Cole, Clive.
 Home Economics: Annie Levesque, Pincher Creek; Kay McKinnon, Carseland.
- (b) Scholarships of \$75.00 for general proficiency tenable at the School of Agriculture in the Second Year of the course—George Wengrenuik, Gunn; Ivy-Noreen Blair, Picture Butte.

O.S.A. Alumni Association Scholarships, \$50.00 each—

Agriculture: Greta Wuth, Rat Lake
 Home Economics: Audrey Shrumm, Coaldale

The Alberta Seed Growers' Co-operative Scholarship, \$50.00—
 Jack Sandeman, Cowley

The Alberta Women's Institutes Scholarship, \$50.00—
 Margaret Reynolds, R.R. No. 4, Calgary

The Robert Gardiner Memorial Scholarship, \$50.00—
 Dietrich Ammeter, R.R. No. 1, Red Deer

The Alberta Turkey Producers' Association Scholarship, \$50.00—
 Scott Primrose, Scollard

The Canadian Legion Scholarship, \$100.00—
 James M. Bodman, Edmonton

In addition to the foregoing scholarship awards, thirty-four students were presented with various awards and prizes.

GENERAL COMMENTS—1948-49 TERM

In the latter part of February, J. A. Groombridge, Instructor in Horticulture, resigned. At the close of the term F. N. Miller, Principal, resigned and was replaced by the present incumbent of the position. Miss Elizabeth Guest, Instructor in Home Management, resigned at the close of the term. Mrs. C. L. Allsop (Moore) also resigned from the staff in June. At the end of the School term F. F. Parkinson was transferred from the staff of the School to the Field Crops Branch as Special Project Supervisor.

There were five students in the agricultural course who received assistance from the Department of Veterans' Affairs to attend the School of Agriculture during the year.

SUMMER PROGRAM*Summer Activities of the Staff*

During the summer months, when the School was not in session, members of the staff were engaged in various duties connected with the School or with other Branches of the Department.

M. W. Malyon took charge of the grounds and the garden during the summer and assisted with the summer short courses. Miss Gwen Caverhill devoted considerable time to the Women's Extension Service, but remained at Olds and was in charge of the dormitory for the summer courses and other conventions. F. C. Jorgenson was Acting Principal during the absence of the Principal, and devoted a good deal of time to the summer courses and other School activities. George Carter and H. J. Armstrong were employed on a full-time basis by the Department of Public Works during the months the School was closed. Miss F. C. McIntyre was employed with the Women's Extension Service during all of the summer months. H. W. Sutherland spent a part of the time at the School, and for the remaining period of the summer was employed by the Fur Farms Branch as an inspector. Miss Margaret McKim accepted a position as District Nurse at Two Hills. D. R. Macpherson left at the end of the term to spend the summer on his farm at Delia.

Summer Events at the School

There was considerable activity at the School from the time it closed in the spring until opening date in the fall. There follows a list of the events together with the dates and approximate attendance in parenthesis.

April 11-13	Alberta Federation of Home and School Associations	(200)
April 19	District Home Economists' Convention	(15)
April 21	Garden Club Leaders' Conference	(20)
April 29	District Rural School Musical Festival	
June 3	Alberta Poultry Producers' Association	(30)
June 11	District Dairy Calf Club Field Day	(125)
June 18	Avondale Shorthorn Club	(200)
June 28	Holstein Breeders' Field Day	(100)
June 29	Co-operative Wholesalers' Meeting	(65)
June 29	Baptist Church Picnic	(70)
July 1	Evangelical Church - Didsbury	
July 5-6	Club Leaders' Conference	
July 5-8	Dormitory Supervisors' Course	(15)
July 11-15	Junior Farm Club Week	(173)
July 19-28	Women's Institute Girls' Clubs	(150)
July 25-28	Farm Women's Week	(93)
July 29	Alumni Meeting and Dance	(150)
August 5	District W. I. Convention	(50)
September 29-30	Junior Farm Clubs Eliminations	(132)
October 11-12	Schools of Agriculture Instructors' Conference	(30)

BUILDINGS AND GROUNDS

During the summer of 1949 the buildings on the north side of the campus, with the exception of the two residences, were connected to the central heating plant. Although some adjustments were necessary in order to get the proper balance of heat in the different buildings, the system proved to be a great improvement over the old system of separate furnaces and stoves.

The livestock building and the metal work shop were stuccoed.

A new start was made on the glasshouse situated just west of the livestock building.

Although good progress was made with the stage addition to the gymnasium, it was not completed by the time the students arrived in the fall. The re-shingling of the dormitory was completed.

The silos and hog barns were painted.

The ceiling of the dining room was done over with Donnacona board and fluorescent lights were installed. This work greatly improved the lighting, accoustics and appearance of the room.

No major changes were made in the layout of the grounds.

Some areas were unsightly during the summer because of the construction that was under way. The present plan is to have the front area fairly open with expansive lawns, and to establish a good shelterbelt on the north side, using taller trees for framing and background. The play field is to be moved to the south side of the dormitory.

SCHOOL FARM

Nineteen forty-nine was one of the poorest crop years ever experienced in this part of the country. With no reserve moisture from the fall of 1948 and a very dry spring the hay land had to be used for pasture, with the results that only about 10 tons of hay was cut. This meant that it was necessary to buy a considerable amount of hay. During the summer pastures got so short that a 60 acre field of oats was used for pasture.

Totals of grain threshed: 3,615 bushels oats, 2,207 bushels barley; 30 acres of oats were cut for ensilage and greenfeed; 40 tons of hay were put up and 15 tons of greenfeed cut; 25 acres was seeded down to a grass mixture, but on account of the dry summer and fall it may not turn out so well; 90 acres were summerfallowed and 48 acres of grassland broken.

The Holstein, Shorthorn and Angus cattle came through the dry year in fair to good condition. The calves from all three herds have turned out very well. Good sales were obtained for all the stock which was offered for sale. There is still a fair demand for cattle.

The dairy herd has improved a lot from last year, several of the heifers have made very good records on R.O.P.

The milking machine which was installed last summer proved to be a great help and is working very satisfactorily.

The Aberdeen-Angus sire was sold last spring and replaced by a very good two-year-old bull for the Henderson herd.

Nineteen head of Angus females were shipped to Fairview last November. There are still a few head here for class work, including the herd sire. They will be shipped to Fairview in the spring.

The usual number of hogs were raised; those that were ready were sold, and a few butchered for the dormitory, but the demand has dropped off considerably.

As in former years, the chickens were disposed of when the summer courses were over, and replaced by pullets and cockerels in the fall.

The demand for horses is still very poor, but a few mares were bred last summer, as the Dominion Government placed a Percheron stallion here for part of the season for the use of the Percheron breeders around this part of the country.

All the livestock are wintering well.

THE 1949-50 TERM

Staff for 1949-50 Term

C. E. Yauch, B.Sc.—Principal.
 V. E. Molsberry, B.Sc.—Field Husbandry.
 D. R. Macpherson, B.Sc.—Animal Husbandry.
 M. W. Malyon, B.S.A.—Dairying and Poultry.
 W. C. Kirk—Farm Machinery and Motors.
 H. J. Armstrong—Metal Work.
 G. W. Carter—Building Construction and Farm Buildings.
 H. W. Sutherland, B.Sc.—Science.
 F. C. Jorgenson—English, Mathematics, Dean of Men's Residence.
 Miss F. C. McIntyre—Cooking and Nutrition.
 Miss Helen Moseon—Sewing, Clothing and Textiles.
 Mrs. E. M. Nelson, B.A.—Home Management and Handicrafts.
 Miss G. R. Caverhill, B.Sc.—Dietitian, Dean of Women's Residence.
 Miss M. McKim, R.N.—Resident Nurse.
 A. R. Hoefling—Accountant.

ENROLMENT OF STUDENTS FOR FALL TERM

Year	Home Economics	Agriculture
First	31	56
Second	19	40
Two-in-One	16	28

More students applied for the two-in-one class in Agriculture than could be accepted, partly because of the size of the class, and partly because of dormitory accommodation. No students were accepted in the first-year agriculture course who were born after December 31, 1936. Some twenty applicants were refused because of age.

GENERAL:

The fall dance sponsored by the Alumni Association was attended by some 450 ex-students and their friends. At the meeting which preceded the dance it was decided to donate \$300.00 to the School for the purchase of public address equipment. The public address system is to be installed in the auditorium upon completion of the extension. The School officials naturally appreciate very much the action of the Alumni Association in making this contribution to the welfare of the institution.

VERMILION SCHOOL OF AGRICULTURE

THE 1948-49 YEAR

The 1948-49 term at the Vermilion School of Agriculture was terminated with the graduation exercises on April 5th. Mr. Donald Cameron, Director of the Department of Extension, University of Alberta, was the guest speaker at the graduation exercises, while Mr. R. M. Putnam represented the Department of Agriculture.

Diplomas were awarded to 59 students in Agriculture and to 29 students in Home Economics.

Guest speakers who visited the School and addressed the students included: Professor A. S. R. Tweedie, Extension Department, University of Alberta; Professor Sanders, Great Britain; G. R. Sterling, J. E. Birdsall, W. G. leMaistre, Miss C. Judson and Miss B. J. Lewis, all of the Provincial Department of Agriculture.

There were also a number of representatives from various commercial firms who provided special equipment, devices or information of interest or value related to particular subjects of the courses in Agriculture or Home Economics.

Class projects of special note include the following: Construction of three small farm buildings by the carpentry classes; some considerable class time devoted to gas and electric welding; the brooding and rearing of 300 chickens by members of the classes in poultry husbandry; major tractor overhaul projects in motor mechanics; visits by animal husbandry classes to the farms of various pure-bred livestock breeders.

Special events featured during the spring term included the following:

February 20-21—Visit by party of 42 students and staff members from the Olds School of Agriculture.

March 5—Dramatics Night.

March 20—Concert by the Edmonton Schoolboys' Band.

March 30—Little Royal and Achievement Day.

April 5—Graduation Exercises.

The Little Royal and Achievement Day continues to enjoy popular support and attention, not only among district residents but on the part of a large number of persons from widely scattered areas. Parents of students, former students, prospective students and groups of Junior Club members formed a large part of the estimated one thousand persons attending. Guest judges included Mr. S. W. Sheppard, Mr. W. N. Pidruchny, Mr. B. T. Stephanson, Mrs. V. G. Macdonald and Miss M. K. Fraser.

Winners of Scholarships were named as follows:

The Alberta Surplus Wheat Board Money Trust Scholarships (tenable at the University of Alberta, \$100.00 each)—

In Agriculture: Neil Harvie, Calgary; Frank Tissington, Grande Prairie; Tom Rawson, Edmonton.

In Home Economics: Mary Shemanchuk, St. Michael; Louise M. Ellett, Morinville.

The Alberta Surplus Wheat Board Money Trust Scholarships (tenable in Second Year, School of Agriculture, \$75.00 each)—

Kenneth Hansen, Millet; Margaret Alton, Fort Saskatchewan.

- The United Grain Growers' Scholarships, \$50.00 each—
Edward Sokalski, New Kiew; Steve Sorochan, Vermilion;
Anne Jackson, Keg River.
- The V.S.A. Alumni Scholarships, \$50.00 each—
Bernard Weise, Westlock; Gladys Bohaychuk, Musidora.
- The Vermilion Board of Trade Scholarship, \$50.00—
Victor Aalhus, Baldonnel, B.C.
- The Alberta Seed Growers' Scholarship, \$50.00—
George Hobbs, Czar.
- The Craig Brothers' (Vermilion) Scholarship, \$50.00—
Arden Wingrove, South Edmonton.
- The Alberta Women's Institutes Scholarship, \$50.00—
Katie Kachuk, Desjarlais.
- The Robert Gardiner Memorial Scholarship, \$50.00—
Suzanne Bourgeois, Girouxville.
- The Alberta Turkey Breeders' Scholarship, \$50.00—
Agnes Townsend, Manville.
- The Canadian Legion Scholarship, \$100.00—
George R. Winter, Edmonton.
- Winners of the Staff Medals were: Neil Harvie, Calgary; Anne Fushtey, Shandro; Charles Osbaldeston, Fort Saskatchewan; Shirley Lewis, Bon Accord.

Prizes to a value in excess of \$500.00 were awarded for achievement in various branches of classroom activity. Donors included: The Northern Hardware Company, Vermilion; Taylor & Pearson, Edmonton; McLeod's Limited, Vermilion; The Alberta Livestock Co-operative, Edmonton; The T. Eaton Company, Edmonton; The Alberta Poultry Producers, Edmonton; The Imperial Oil, Edmonton; The Line Elevators Farm Service, Winnipeg; The British-American Oil Company, Calgary; The Northern Alberta Dairy Pool, Edmonton; Craig Bros., Vermilion; Stephens Limited, Vermilion; The Vermilion District Co-operative; Johnstone Walker, Edmonton; Robert Simpson Company, Regina; Franco Public Service, Vermilion; Simonson's Furniture, Vermilion; Dainty Maid Bakery, Vermilion; The Columbia Theatre, Vermilion; Boake's Drug Store, Vermilion; Long's Drug Store, Vermilion; The Canadian Bank of Commerce, Vermilion.

Numerous commercial firms made a valuable contribution to the work of the School in providing machinery, equipment and illustrative material of various kinds for use in the classrooms. Their assistance in this regard was most valuable and highly appreciated.

In addition to the regular classroom work the students were given every possible encouragement to participate in a wide variety of extra-curricular activities organized under the Students' Council and supervised by members of the instruction staff.

A large number of students participated in such major sports as hockey and basketball, where organized house leagues were formed and school teams chosen, but increasing interest was given both curling and badminton, which had not previously attracted much attention.

Literary activities included entertainment programs on a competitive inter-class basis, a public speaking contest, or-

ganization of a choral group and a school orchestra, production of three one-act plays, regular publication of a School paper and publication of a yearbook.

An innovation which proved popular with the students and served several useful purposes was the establishment of a "Snack-Bar". In order to provide for a general desire to have a lunch before bed-time the students operated an arrangement to serve light lunches—soft drinks, milk, ice cream, cookies, doughnuts and chocolate bars. These were sold at a slight mark-up over cost. The net proceeds became the property of the Students' Council to augment its budget. Apart from satisfying a popular demand for refreshments, the "Snack-Bar" gave the students a practical project in co-operative organization and further opportunity for sociability.

At the end of the term the Students' Council made a contribution to the School in the form of a public address system, complete with microphone and record-playing attachments. Cost of this equipment in the amount of \$200.00 was paid for out of surplus accumulated by the Council in its operations during the term. The spirit which prompted this donation on the part of the students is highly appreciated by the staff.

THE SUMMER PROGRAM

The series of short courses held during the month of July was the principal feature of the summer program. These courses were confined, in 1949, to ones which have become established during the past several years as follows:

- July 5th to 8th—V.S.A. Alumni Short Course and Reunion.
- July 11th to 14th—Farm Women's Week.
- July 18th to 23rd—Junior Club Week.
- July 25th to 30th—Boys' and Girls' Fair Camp.

The V.S.A. Alumni Short Course attracted an attendance of 60 former students and proved highly successful. A novel feature of this Short Course for the girls was a series of lecture-demonstrations on beauty culture presented in a most interesting and popular manner by Paul-Pierre of Edmonton. Other topics included in this course gave particular attention to subjects that could be dealt with best in midsummer. The course closed with the Alumni Reunion Banquet and Rose Ball attended by 350 persons. Banquet speaker was Mr. W. J. Elliott, former Principal, and many of his former students enjoyed a visit with him.

Those attending Farm Women's Week were most enthusiastic about the program presented. However, it was felt that more effective publicity could have attracted a larger attendance.

The names of winners of Alberta Surplus Wheat Board Money Trust scholarships chosen at Junior Club Week will be found in the report on Junior Activities.

The Boys' and Girls' Camps sponsored jointly with the Vermilion Agricultural Society again attracted a maximum attendance and proved popular with district young people 14 to 18 years of age. Sixty boys and sixty girls were enrolled.

The School of Agriculture continues to serve numerous organizations throughout a wide area as a meeting place where

its grounds and buildings provide ideal facilities. The following are some of the principal events held:

Vermilion Horticultural Society Annual Meeting.
Credit Union Annual Meeting.
Provincial Veterinarians' Meeting with District Farmers.
Junior Turkey Club Meetings and Achievement Day.
United Church Picnic.
District Weed Inspectors' Conference.
District Poultry Producers' Meeting.
Anglican Church Picnic.
Masonic Lodge Picnic.
Alexandria and Vegreville Constituencies Joint Women's Institutes Conference.
District Junior Farm Clubs Field Day and Rally.
Vegreville, Vermilion and Wainwright Joint Teachers' Convention.
Pure-bred Livestock Show and Sale.
Rural Electrification Co-operative—Power Turn-on Celebration.

EMPLOYMENT OF STAFF DURING SUMMER MONTHS

In addition to the responsibilities associated with the summer short courses and special events outlined above, members of the teaching staff engaged in a variety of activities. Only five of the men and two of the ladies were available for this work. Other instructors either resigned their positions or had only been engaged for the duration of the regular winter courses.

J. L. Kerns, Instructor in Animal Husbandry, carried on supervision of the School Farm, and J. E. Hawker, instructor in Horticulture, continued in charge of the maintenance of the grounds, gardens and field crop plots, but both men devoted considerable time to assisting with programs throughout the area where their respective special training and experience were employed in Junior Club activities, farmers' meetings and agricultural fairs.

S. C. Acheson, Instructor in Farm Mechanics, assisted the Extension Service in conducting a series of farm machinery field days over a wide area of the province during May and June. The services of D. C. Folk were employed on a number of occasions leading and giving demonstrations on community singing. When not engaged in these projects both men devoted their time to installing and fitting classrooms with special features and facilities.

Miss M. J. Hawrelak and Miss E. M. Curran were employed by the Women's Extension Service, and R. A. Harvey was engaged as Fieldman by the Field Crops Branch.

IMPROVEMENTS TO THE GROUNDS AND BUILDINGS

Principal projects completed by the Department of Public Works were as follows:

Re-wiring of the electrical circuits in the dormitory and installation of electrical outlets in student rooms.

Installation of classroom and fire-alarm bells throughout the various buildings.

Installation of new refrigerator equipment in a new location to service the dormitory kitchen.

Addition of an outer finish of cedar-grain asbestos shingles to the mechanics' building.

Replacement and re-routing of the electric power lines serving the school premises.

Additional gravel was applied to the roads about the school grounds and about 100 yards of cement sidewalks were laid.

The general appearance of the grounds, attractive displays of flowers and shrubs, and the demonstration material in the Field Crop plots attracted inspection by the general public in increasing numbers.

SCHOOL FARM

Extremely dry weather throughout 1949 seriously reduced yields of all crops with the result that some 10 tons of hay, 1,000 bushels of feed oats and 15 tons of potatoes had to be purchased to supplement farm production.

Pure-bred Suffolk rams and Yorkshire swine were in strong demand.

Improvement in the quality of the dairy herd through breeding and selection is evident in the following figures based on Provincial Cow Testing Service Records:

1947—Average butterfat production per cow—324 lbs.
1949—Average butterfat production per cow—343 lbs.

Farm sales to the dormitory were:

Milk and Cream	\$3,308.79
Eggs	311.95
Meat	4,205.53
	\$7,826.27

Total farm sales amounted to \$18,609.56.

Construction and fitting of the farm mechanics repair shop and the sheep barn were completed. These two additions to the farm buildings are proving most useful and highly satisfactory.

Both the regular and special classes devoted increasing attention to all phases of livestock breeding, feeding and management practices as demonstrated on the School Farm.

THE 1949-50 TERM

Registration for the regular 1949-50 term opened on October 25th. Enrolment was as follows:

Agriculture: —	First Year	61	
	Second Year	39	
	Two-in-One	28	128
Home Economics: —	First Year	32	
	Second Year	16	
	Two-in-One	13	
		61	
		189	

All applicants in Home Economics were accepted, but some forty applications for the First Year Course in Agriculture and twelve applications for the Two-in-One course had to be refused because of the limited accommodation available. The matter of reserving accommodation for early applicants who later fail to

register continues as a problem. Fourteen cancellations of such applications were received on or after one day before the courses actually opened.

Approximately one-half of the First Year Class in Home Economics was at the minimum age of 16 years and the average age of all students in Home Economics was 17 years. All students in the Agriculture classes were 17 years of age or older, 18 were 21 years or older and the average was 19 years.

Instruction and administrative staff was as follows:

- N. N. Bentley, B.A., B.Sc.—Principal, Instructor in Farm Management.
- J. L. Kerns, B.Sc.—Instructor in Animal Husbandry, Superintendent of School Farm.
- J. E. Hawker, B.A., B.Sc.—Instructor in Botany, Horticulture and Mathematics.
- S. C. Acheson, B.S.A.—Instructor in Motors and Machinery.
- L. Blades—Instructor in English, Community Organization, Economics and Entomology.
- D. C. Folk—Instructor in Farm Building and Home Mechanics.
- R. A. Harvey, B.Sc.—Instructor in General Science.
- E. V. Hamula, B.Sc.—Instructor in Dairying and Poultry.
- K. M. Stone, B.Sc.—Instructor in Field Husbandry.
- S. W. Pettem, B.Sc.—Instructor in Metalwork and Mathematics.
- R. N. Howarth—Dean of Men's Residence and Instructor in Physical Training.
- Miss L. M. Graham, R.N.—Instructor in Home Nursing, School Nurse and Dean of Women's Residence.
- Miss E. M. Curran, B.Sc.—Instructress in Home Management, Laundering and Handicrafts.
- Mrs. F. L. Hagglung—Instructress in Sewing and Clothing.
- Miss Lila Engberg, B.Sc.—Instructress in Nutrition and Cooking.
- Miss Anne Puchalik, B.Sc.—Dietitian and Instructress in Mathematics.
- J. R. Roxburgh—Accountant.
- Mrs. K. Bell—Stenographer.
- Miss I. McCormick—Librarian.

REPORT OF JUNIOR ACTIVITIES AND YOUTH TRAINING

G. S. Black, Supervisor, Junior Activities and Youth Training.

Margaret K. Fraser, Supervisor, Girls' Club Work.

C. L. Usher, Assistant Supervisor, Junior Activities.

GENERAL

The report on Junior Activities for 1949 includes a section dealing with the work of girls' clubs. The latter report formerly appeared in the report of the Women's Division of the Extension Service. During the year the Department effected a transfer of Miss M. K. Fraser, Supervisor of Girls' Club work, from the Extension Service to the Junior Activities division. This move was made in line with the Department's policy of consolidating all work with rural young people.

Membership has continued to increase in Junior Clubs, and more of Alberta's farm youth are in junior club work than in any other period. This type of rural youth education is receiving more serious thought in Alberta, as well as across Canada, and is now on a high pinnacle of popularity.

Beef Feeding Clubs continue to remain the most popular, and again good sale prices were received. Dairy Calf Clubs continue to expand, but expansion is dependent upon the supply of dairy heifer calves, which at the present is not sufficient for the needs of such clubs. Grain Clubs are increasing in number and membership, while Poultry and Swine Clubs are lagging badly.

Summer camps, short courses and rallies which are now part of the club program were well attended. The Club Leaders' Conference, again held at the Olds School of Agriculture, was extremely well attended and very favorably received.

Members of the junior clubs had an outstandingly good year at the Royal Winter Fair, Toronto. Three national championships were won, which record has only been attained once previously. In the grain exhibiting the top awards in wheat, oats and barley came to Alberta club members, as well as the first 18 awards in spring wheat, R. Sharpe of the Drumheller Grain Club winning the reserve championship of the Royal Winter Fair.

Early this year G. S. Black was elected to the presidency of the Canadian Council of Boys' and Girls' Club Work in Canada, and can report a most successful year.

Mr. Les Usher, a graduate of the University of Alberta and a former club member, has now joined this Branch. His work is being efficiently done and will allow for considerable expansion in club activities.

The following is an analysis of each project:

ALBERTA'S JUNIOR CLUBS, 1949

	No. of Clubs	Membership
Beef	81	1,525
Dairy	25	520
Swine	1	14
Poultry	1	14
Wheat	50	905
Oats	26	441
Barley	22	357
Forage	11	186
Potato	1	14
Food and Clothing	125	1,660
Total	348	5,686

ALBERTA JUNIOR CLUBS
(1939 to 1949 inclusive)

Project	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
Swine	30	30	22	21	13	12	7	1	3	2	1
Beef	22	26	27	38	37	42	47	56	73	88	81
Dairy	10	12	9	10	10	11	15	14	18	25	25
Poultry	—	—	—	6	8	—	—	2	3	1	1
Wheat	74	78	54	40	23	19	21	34	42	38	50
Oats	23	18	21	22	30	26	19	24	17	22	26
Barley	7	8	8	33	30	26	15	16	26	28	22
Potato	—	1	2	—	3	3	2	8	2	—	1
Forage	—	—	—	—	13	19	14	10	15	13	11

AGRICULTURAL PROJECTS

BEEF CALF CLUBS

The beef calf feeding project can again report a very successful year. Consistently high prices were bid for calves, resulting in profitable returns for the winter's work. About nine clubs that were in operation the previous year did not organize this year. Members are beginning to realize that there is a possibility of financial loss should prices decline at or near selling time. Members are receiving prepared lessons on feeding, care and management plus personal visits from their District Agriculturist. Commercial concerns continue to support such clubs and are largely responsible for the continued high prices paid for club calves. The total gross sale value of club calves in 1949 was \$248,000.00. Group judging has been adopted, and lower grades of calves are becoming fewer.

Judging at achievement days was done in the main by Messrs. Noad, Johnson, Mead and Fulcher. The establishing of a uniform standard necessitated all of these judges attending a few fairs held early in the season. Improvement is noted each year and club members and parents are gradually becoming more familiar with the newer system of judging.

Local achievement days are fast becoming real events in many rural areas. An increase in the attendance of interested spectators is noted at most fairs, which have now become one of the main annual agricultural events.

DAIRY CALF CLUBS

Dairy Clubs continue to increase in number and in membership. As each member secures one dairy heifer calf each year for three consecutive years, the obtaining of sufficient calves has become a serious problem. More clubs would be organized if a supply of calves could be guaranteed. Needless to say, there is competition in the securing of these calves from truck drivers from adjacent areas and from the present replacement policy of the breeders themselves.

For the third consecutive year a Provincial Dairy Show was held in conjunction with the Red Deer Exhibition. Assistance was given to exhibiting members by the Alberta Dairymen's Association, the Red Deer Exhibition and the Department of Agriculture. The judging of the calf and yearling classes of this event has become one of the outstanding events at this "B" Class fair. The Provincial championship was won by Robert Clarke of the Didsbury Club, and the yearling class by Miss

S. Anderson of the Springbank Dairy Calf Club. Suitable awards were made to these members.

One member from each of the Junior Dairy Calf Clubs attended the Dairymen's Association Convention at Calgary as guests of the Association. A program of live stock judging was arranged, and tours were made of places of interest in Calgary. Miss Lorna Brewster and Miss Lois Charlton of the Bowden Calf Club gave an excellent demonstration on "Washing Dairy Utensils".

SWINE CLUB

Lack of interest continues in this project, no requests being received for the organization of more Junior Swine Clubs. Winterburn is the only Swine Club to complete its year's work.

POULTRY CLUBS

A new Turkey Club was formed at Vermilion. The year's work was successfully completed with the holding of an achievement day. Members grew and marketed the finished product. Meetings are being held by the club.

CROP CLUBS

Junior Crop Clubs continue to increase in number and activities. Despite an adverse crop year progress can be reported. Fullest co-operation has been received by the Field Crops Branch. A new venture, that of a Provincial Plot Competition, was held. Plots were examined as regional winners, and Ian Borwick of the Drumheller Wheat Club, Irene and Ivy Herndon of the Drayton Valley Oat Club, and Andrew and Michael Woitas of the Skaro Barley Club were declared Provincial champions.

Sponsoring organizations again assisted materially by paying a large portion of the seed costs and providing plot awards, trophies and a portion of the cost of the Club Leaders' Conference.

An increase of 12 Wheat Clubs, 4 Oat Clubs and 2 Forage Clubs was noted.

Seed distributed to both organized and newly-formed clubs was as follows: 2,065 bushels of wheat; 1,722 bushels of oats; 776 bushels of malting barley; 3,000 pounds of forage seed.

Achievement days were judged by District Agriculturists from adjoining areas where regional seed fairs were held and more than one club exhibited; good attendance and interest is reported. Early frosts across the Province were responsible for much damaged grain. Three samples from each fair were taken for exhibit at the Provincial Junior Seed Fair being held in Calgary.

Four hundred and fifty-seven exhibits were shown at the Provincial Junior Seed Fair held in Calgary about the end of January, 1949. This is the major attraction of this event and creates exceptionally good interest. Senior students from both Schools of Agriculture assist in placing awards in the junior classes.

In the grain exhibits at the Royal Winter Fair, Alberta juniors won first in the junior wheat section as well as the first eighteen awards in this class, along with the 24th, 25th, 29th, 30th, 32nd, 33rd and 35th. In all, Alberta won 25 of the 35 awards. R. Sharpe of the Munson Wheat Club not only won first prize, but the reserve championship of the show on his sample of Thatcher wheat. The names of club members who placed in the grain section are given below:

1st—Ricky Sharpe, Munson	15th—Richard Harsch, Box 100, Carbon
2nd—Howard Roppel, Rockyford	16th—Danny McDermid, Drumheller
3rd—Ian Borwick, Drumheller	17th—Ray Schaffer, Box 313, Acme
4th—Marjorie Leiske, Beiseker	18th—Delmar Haining, Acme
5th—Bernard Hendricks, Rockyford	20th—Lois McArthur, Drumheller
6th—Leslie Mason, Warner	24th—Don J. Buyer, Carbon
7th—Wm. Hendricks, Rockyford	25th—Ed. Nakaska, Three Hills
8th—Franklin Jensen, Trochu	29th—Edward S. Holt, Roma
9th—Ken Julson, Delia	30th—Kenneth James, Fairview
10th—Harry V. Holt, Roma	32nd—Ronald Dryer, Fairview
11th—Reta Northey, Peace River	33rd—Merle Ohlhauser, Box 198 Carbon
12th—John Rock, Drumheller	35th—Lawrence Houle, Fawcett
13th—James Rock, Drumheller	
14th—Ronald B. Stevenson, Delia	

In White Early Oats the first three awards went to Alberta exhibitors, Henry D. Unruh of Vauxhall standing first, Norbert Frederick of Busby second, and Horst Mirus, R.R. 1, Busby, third, while in Class 860, Medium to Late Varieties, Norman Boulton of Abee was first and James McNab of Beaverlodge second. In Six-Rowed Barley, Vernon Lewis stood first, Roger Yacooshin second, Andrew Briggs sixth, and Malcolm McCrimmon seventh.

It is also interesting to note that at the International Grain Show in Chicago, the following juniors and ex-junior club members placed as follows:

Red Spring Wheat: R. Sharpe, Munson (3rd); S. J. Allsop, Red Deer (6th); M. Leiske, Beiseker (7th); H. Roppel, Rockyford (8th); B. Hendricks, Rockyford (11th); S. Borwick, Drumheller (15th); L. Mason, Warner (18th).

Oats: S. Pawlowski, Spedden (Championship); W. Skladan, Andrew (2nd); J. Boulton, Abee (3rd); G. Moyer, Elmworth (5th); N. Boulton, Abee (6th); N. Frederick, Busby (8th); J. McNab, Beaverlodge (11th); H. Unruh, Vauxhall (12th); H. Mirus, Busby (15th).

Barley, Six-Rowed: R. Yacooshin, Eckville (14th); V. Lewis, Bon Accord (15th).

The various Provincial Competitions for Grain Club members were successfully terminated. The awards made in these competitions follow:

Winners of Inter-Club Plot Competitions

Wheat—Department of Agriculture Trophy:
Orkney Junior Wheat Club.

Oats—Alberta Seed Growers' Association Trophy:
Clive Junior Oat Club.

Feed Barley—Vauxhall Junior Feed Barley Club.

Malting Barley—Winterburn Junior Barley Club.

Forage—Spedden Alfalfa Club.

Winners of Inter-Club Seed Exhibits at Junior Feed Fair

Wheat—Alberta Wheat Pool Trophy:
 Rockyford Junior Wheat Club.
 Oats—Clive Oat Club.
 Feed Barley—Vauxhall Junior Feed Barley Club.
 Malting Barley—Harvest Home Barley Club.

Winners of Awards at Junior Seed Fair for Individual Samples

Wheat—Howard R. Roppel, Rockyford Junior Wheat Club.
 Oats—Olga M. Pawlowski, Vilna Oat Club.
 Feed Barley—Henry D. Unruh, Vauxhall Junior Feed Barley Club.
 Malting Barley—Donald Maygard, Gwynne Junior Barley Club.
 Alberta Wheat Pool Shield for Wheat Club with highest general efficiency standing for 1948—Acme Junior Wheat Club.
 Inter-Club Grain Judging Competition—Won by James Miller and Melvin Heinzlmeir of Rockyford.

JUNIOR CLUB WEEK

Junior Club Week, which is held at both Schools of Agriculture, is one of the highlights of junior club work in Alberta. An efficiency winner is chosen in each club for all-round club proficiency. These winners are rewarded by a free trip to Club Week at Olds or Vermilion. The week consists of a program of education and recreation, with part of the time being given to details of specific Club projects. At the end of the week, judging competitions and tests are conducted, on the basis of which six scholarships valued at \$75.00 each are awarded. The scholarships are provided from the Surplus Wheat Board Monies Trust, and are tenable at a School of Agriculture. In 1949 members of agricultural clubs and 112 members of home economics clubs attended Club Week.

Scholarship winners were:

Olds	Home Economics—Helen Wagner, Nanton
	Joan Lailey, Hanna
	Grain—Marie Mappin, Byemoor
	Lloyd Coad, Munson
	Livestock—Allan Wilson, Duhamel
	Peggy Morrison, Innisfail
Vermilion	Home Economics—Cecile Laplante, Vimy
	Mary Ann McMahon, St. Paul
	Grain—Gerald Ambrose, Lake Isle
	Signar Helgeland, Ryley
	Livestock—John Kelly, Lloydminster
	Ross Gould, Rosalind

JUDGING COMPETITIONS

A provincial elimination judging competition was held at the Olds School of Agriculture on September 29th and 30th to select judging teams to represent Alberta in the National Judging Competitions that were held in Toronto during the Royal Winter Fair. The practice of holding several regional contests was discontinued this year and the plan that has been followed in the home economics clubs was adopted. Under the new plan each District Agriculturist or District Home Economist makes an elimination in his own district and the winners enter the Provincial contests. This system of conducting the eliminations seems to have many advantages and is likely to be continued.

This year the number of teams entered in the five contests in which Alberta was eligible to participate were:

Clothing—12 teams
Foods—12 teams
Grain—17 teams
Beef—16 teams
Dairy—10 teams

The winning teams in the Provincial competitions were:

Clothing—Arlene Nelson and Dorothy Olson, Veteran
Foods—Dolores Guttrath and Gwen Koefoed, Cluny
Grain—George Brebner and Leslie Miller, Spruce Grove
Beef—Ross Gould and Alan Wilson, Duhamel
Dairy—Brian Westmancoat and Elvin Knudslein, Ryley

NATIONAL JUDGING COMPETITION

Alberta teams captured three National Judging Competitions in the 1949 National Contests, thereby equalling a record that was first made in 1935. Alberta's standings were:

Clothing—First: Arlene Nelson and Dorothy Olson, Veteran
Foods—First: Dolores Guttrath and Gwen Koefoed, Cluny
Beef—First: Ross Gould and Alan Wilson, Duhamel
Grain—Third: George Brebner and Leslie Miller, Spruce Grove
Dairy—Fifth: Brian Westmancoat and Elvin Knudslein, Ryley

Three of the Alberta contestants also won highest individual honors:

Foods—Gwen Koefoed
Clothing—Arlene Nelson
Beef—Alan Wilson

ALBERTA AWARDS, NATIONAL JUDGING COMPETITIONS—1931-1949

	Beef	Grain	Swine	Dairy	Potato	Clothing	Food
Number of Competitions	18	18	14	15	1	4	3
Number of Awards to Alberta:							
First	6	5	5	0	0	1	2
Second	6	4	1	0	0	1	1
Third or lower	6	9	8	15	1	1	0

LEADERS' COURSES

Again two Leaders' Courses were held. Leaders of gardening projects attended a course in April, prior to the start of their work. Twenty-five leaders were present. The excellent work done by the clubs whose leaders attended this course shows the value of it. A Club Leaders' Course for all other leaders was held at the Olds School of Agriculture in July. Fifty-one leaders of home economics clubs and 118 leaders of agriculture clubs attended. This course was very much more successful than previously, mainly due to the fact that the club leaders are beginning to take an active interest and know what they want from a course of this kind. The discussion groups were excellent.

Five leaders were presented with awards for five years of service in the work. Four of the five who received similar awards last year are still active leaders. One has retired.

A Leaders' Manual was published by the Canadian Council and is now available to all club leaders. It contains valuable suggestions for many phases of club work.

INTERNATIONAL TRIPS

A delegation of two girls and two boys from the Montana 4-H Clubs attended Club Week at Olds in July. They were accompanied by a member of the 4-H State staff at Bozeman. In return a similar delegation representing Alberta Junior Farm and Home Clubs attended the Montana State 4-H Club Congress at Bozeman in September. The Alberta members were selected on the basis of their achievements in club work, age, personality and speaking ability. They were:

Helen Wagner, Nanton	Marie Griffith, Rumsey
M. Waddle, Vauxhall	George Brebner, Spruce Grove

The Alberta delegates were accompanied by J. R. Gylander, Assistant District Agriculturist, Lethbridge, and Grace Horbay, District Home Economist, Vegreville. This interchange of delegates between Montana and Alberta makes for better understanding and friendliness between the two countries, as well as for wider knowledge and interest in club work.

BOYS' AND GIRLS' CAMPS

Camps for boys and girls were held at the six "B" Class fairs during the 1949 exhibition. These camps are conducted as one of the junior activities of the fair. Each fair conducting approved junior activities receives financial assistance from the Dominion Department of Agriculture. These activities are directed by a committee representing the Dominion Department of Agriculture, the Fair Board and the Alberta Department of Agriculture. The members of camps are housed in army huts, school dormitories or tents. During the period of the camp an educational and recreational program is carried on. Organizations such as the Alberta Wheat Pool, Line Elevator Farm Service and others provide banquets and suitable awards.

Details of the camps conducted in 1949 follow:

Fair	Attendance	
	Boys	Girls
Lloydminster	50	50
Vermilion	64	62
Vegreville	53	14
Red Deer	73	49
Camrose	37	31
Lethbridge	46	26

RALLIES

The vast majority of clubs conduct a rally during the summer months. This event frequently takes the form of a visit to some spot of agricultural interest, such as an Experimental Farm, School of Agriculture, University or other institution. One of the most outstanding rallies this year was sponsored by the Edmonton Exhibition Association, which played host for one day to more than 200 club members.

HOME ECONOMICS PROJECTS

Nineteen forty-nine has been a very successful year for girls' club work in Alberta. This year there were 125 girls' clubs completing the projects, with a total membership of 1,660. Not

only has there been an increase in the number of clubs and the membership, but the standard of work of the club members has shown marked improvement. Much of this is due to better knowledge of the work and added training given to the leaders. Twenty-five leaders or assistant leaders this year were former club members.

Part of this improved standard of work in these home-making clubs can be attributed to the fact that some of the District Home Economists had cars at their disposal this year, and so were able to visit the clubs in their districts more often and give them help at the time it was required.

PROJECTS

This year projects were again offered in the fields of Clothing, Foods, Gardening, Home Decorating and Etiquette. Altogether there were eleven projects outlined covering these phases of home economics.

The food projects have increased in popularity. Sixteen clubs are taking this, as compared to six last year. A new project, "The Main Dish", has been written by the Nutrition Specialist for clubs wishing to carry a second year of this work. Since the gardening projects have been revised to include more food work, this field is being well covered.

The clubs taking gardening projects are supplied with seeds by the Alberta Wheat Pool. It was decided to divide this into three years' work instead of two, so that three different groups of seeds are available each year. Many perennials and shrubs have been added, which will help to improve the appearance of the rural homes. Thirty-nine clubs undertook these projects this year.

JUDGING COMPETITIONS

A team in foods and one in clothing represented the Alberta Girls' Clubs at National Club Week in Toronto this year and took part in the Judging Competitions. Details are given earlier in this report.

AWARDS AND SCHOLARSHIPS

This year 112 efficiency winners attended Club Weeks at the Schools of Agriculture at Olds and Vermilion.

The Alberta Wheat Pool, who sponsor the gardening projects, awarded forty prizes for the best garden plots and presented ten clubs with awards for obtaining the highest standing in each Home Economist's district.

The T. Eaton Company awarded prizes to the member of each club carrying a food or clothing project who placed highest on the basis of project work and club work. Seventy-four awards were made in clothing projects and six in food projects. A pinking shears was the prize to the clothing winners and a timer to the food winners.

The Alberta Wheat Pool scholarship to the value of \$150.00 to a member of a Garden Club enrolling in first-year Home Economics at the University of Alberta was awarded to Miss

Louise Ellett of Morinville. Lorraine Shatz, who won the scholarship in 1948, is now in her second year in Home Economics at the University.

OTHER ACTIVITIES

Girls' club uniforms are still increasing in popularity. They are worn by members attending National Club Week, on out of the Province trips, at club weeks, competitions and other club get-togethers. About five hundred girls have uniforms at this time. In clothing clubs the making of these is part of the project.

Twenty-one tours and field days were held by clubs. Visits were made to Schools of Agriculture, Experimental Farms and local farms and to visit garden plots when judging was being done. A rally was held in conjunction with the Edmonton Exhibition. One hundred and forty members of girls' clubs from the Edmonton district attended. An educational program was provided by this Department and prizes awarded by the T. Eaton Company.

Farm girls' camps were held in connection with the Vegreville, Red Deer, Vermilion and Camrose fairs. Instruction is provided by members of this Department. One hundred and seventy-eight girls attended these camps. The majority of these girls were club members.

This year twenty-one talks were prepared for Farm and Home Forum and CBX Club Broadcasts. A monthly broadcast on Farm and Home Forum is provided for club members. This helps to keep in touch with the clubs. A Club News Letter is sent out to all members. This year it was on a bi-monthly basis because of time required for preparation. This news letter includes instruction and suggestions on project work and news items contributed by the clubs.

The joint Boys' and Girls' Club Weeks held at Olds and Vermilion proved very satisfactory. One of the main purposes of these weeks is to provide some encouragement and training in leadership, and this was accomplished to a great extent this year. A great deal of supervision and assistance is required at these weeks. The help given by the Alberta Wheat Pool fieldmen is greatly appreciated.

This year Miss Patricia Seldon, who is an undergraduate in Home Economics, gave assistance in club work. Her services were very helpful, since the majority of achievement days, field days, tours, club weeks and fair camps were held during the time she was on the staff. It is hoped that this practice of having undergraduates assist in this work may be continued, especially when they have been club members themselves. There are now six club girls registered in Home Economics at the University of Alberta.

In 1949 direct assistance in work was given to thirty-nine former club members by the District Home Economists and this staff. These girls are either homemakers or going on with further education and are interested in having training that will help them with their problems.

The girls' club program is designed to give rural girls an opportunity of obtaining some training in homemaking, to im-

prove their standards and to encourage interest in community activities. In 1949 there was definite improvement in the standards of work turned out by the clubs and almost without exception they contributed something to their community.

In the coming year it is hoped that it will be possible to do more work with girls over club age and to have more rallies and tours. This is a good means of presenting additional educational material and arousing more enthusiasm among club members, their parents and the public in general.

REPORT OF PROVINCIAL HORTICULTURAL STATION, BROOKS

P. D. HARGRAVE, Superintendent

INTRODUCTION

The annual increase of the number of fruit tree seedlings planted in the search for better varieties has, over the past few years, reduced to a minimum the amount of available land suitable for other specialized crops. Further operations will necessitate the development of other parcels of land in the immediate future if the fruit-growing program at the Station is to continue to go forward.

During the year the Superintendent of the Station was on leave of absence for post-graduate study in Great Britain. He was relieved during that time by Mr. P. D. McCalla, Supervisor of Horticultural Field Work. Three of the technical assistants left the Station during the fall for other work and University training.

The heavy irrigating season placed a great strain on the staff to maintain optimum growing conditions, but all of the orchards and seedling blocks entered the winter with a good supply of moisture. This should aid them considerably in overcoming the severe frost of early September and the serious effects of the long mild fall which tended to break dormancy of fruit trees and ornamentals. The winter following, with its extremes of temperature and extended cold period, may prove to be an excellent test for winter-hardiness.

An overhead sprinkler irrigation system was installed to service an area of approximately 10 acres. A drier was also added to process hops and other horticultural crops. The new equipment will in many ways facilitate investigations on horticultural and specialized crops.

CLIMATE

Following a long steady winter, with very little snow cover and minimum temperatures that did not fall below -37°F , an early dry spring was experienced. The dry conditions were aggravated by warm hot winds in April. Exceptionally high day-time temperatures forced tree growth and removed surface moisture from the soil. Tree growth was early and although the last killing frost of the spring season occurred on May 5th tree growth and blossoms were sufficiently advanced to be severely damaged. The low average rainfall of the spring and summer months and the very hot weather of July and August put a heavy strain on the Station's irrigation system. During peak times fourteen second feet of water were being used day and night. The rapid evaporation of the moisture made it very difficult to retain optimum conditions for plant growth. Some crops, as a result, suffered at times from lack of moisture.

Total precipitation for the calendar year was 9.39 inches; 4.56 inches fell in the months of May and June, but at no one time was the total precipitation heavy, with the result that only

surface moisture was obtained which evaporated very quickly. Where germination was satisfactory good crops resulted and these were harvested in a long open season. A severe killing frost occurred on September 12th which did a great deal of damage to all herbaceous plants and to immature wood of deciduous trees. Following this killing frost a period of ideal fall weather prevailed, with little frost until the 7th of October. From October 18th to 22nd low night and day temperatures were experienced, followed again by a long period of warm temperatures with little if any frost. From the 8th of December to the end of the year below-normal temperatures were experienced, with little snow cover until the 28th of December when eight inches fell, accompanied by temperatures ranging down to -30°F . Maximum and minimum temperatures and precipitation for each month are given in the following table:

Month	Max.	Min.	Av. Max.	Av. Min.	Precipitation
January	46	—37	12.06	—7.35	.55
February	43	—28	12.03	—8.89	.14
March	62	—12	41.32	16.90	.25
April	81	21	65.10	33.30	.17
May	88	27	69.45	43.22	2.34
June	92	37	73.83	47.96	2.22
July	94	44	78.09	53.09	.87
August	94	44	83.58	52.03	.46
September	87	22	73.20	40.03	.18
October	70	11	51.71	30.06	1.04
November	71	14	53.03	26.73	.05
December	52	—30	13.41	—1.90	1.12

FRUIT

The light fruit crop, similar in many respects to that harvested in 1947, was the result of exceptionally heavy yields in 1948 and the damaging effect of the frost of May 5th. A large percentage of the fruit that had set was shaken from the trees by the high winds of July 12th.

Stone fruits were the most prolific, with very few crab-apples and apples being harvested. The supply of stone fruits did permit token shipments to be made to old customers and replenished the supply of seed for stock purposes. This was not true in the case of apples, seed of which was badly needed.

Encouragement was afforded by the satisfactory crop of apricots produced at the Strathmore sub-station. This fruit apparently is very well adapted to that district and has yielded good to fair crops each year since the trees reached the bearing age. The selections of cling stone types have proved much more palatable after they have been processed than selections from the free stone group. The apricot block is being increased in the hopes of finding strains that will be more widely adapted to conditions in Alberta. Selections from the sub-station, as soon as propagated, will be distributed in central and northern Alberta for further testing as they may be more readily adapted to growing conditions there than the plum and cherry plum types now being grown.

Three new small apples have been numbered for further trials and the highest scoring group of apricots have been numbered for propagation and distribution. From the fruit trees sent to the Station for testing purposes, one apple, tentatively

called Erling, from the farm of Erling Lund of Airdrie, north-east of Calgary, was outstanding. This new addition to the test block will be watched with great interest.

VEGETABLE VARIETAL TRIALS

The vegetable trials were established on reclaimed land which is being adapted to Station work with sprinkler and gravity irrigation. This new land is low in fertility and organic matter. As a result, two or three years will be required before normal crops can be expected. The test plots will be moved to other land in the meantime. During the past season these trials were conducted in co-operation with the Dominion Experimental Farm Service, the United States Department of Agriculture, a Netherlands seed producing organization and several seed houses. The major part of the vegetable work centres about the selection of varieties suitable for freezing. There is a need for earlier, high-yielding well-colored tomatoes suitable for the canning industry and for market and home garden production. Similar problems are faced with corn. Large, uniform, sweet, tender corn as early or earlier than Marcross is desired for the canning trade, while a larger more uniform corn with the quality of Burbank Bantam is required for the frozen food industry. An early maturing, high quality corn is needed for horticultural zones 4, 5, 6 and 7. In the trials of the last five years, canning corn varieties worthy of intensive study are Marcross, Seneca 60, Seneca 60xC13, Golden Rocket, Sugar Prince and Gold Rush. The more suitable corns for growing in the shorter season districts of the Province, although high in quality, have a shorter cob length. The following, because of their earliness, should replace many of the varieties now grown: Orchard Baby, Altagold, Earliest Pioneer Hybrid and Seneca 60.

Farthest North continued to be the earliest high yielder of ripe tomatoes, but because of its small size is of little value except for parental material in a breeding program. Lethbridge 3700, Redskin and Early Chatham are amongst the earliest of the named varieties of tomato. These are followed by the larger varieties Bounty and Red Cloud. A Station selection, B.V. No. 15, was the highest yielding tomato, but owing to its poor color and small size may never be valuable except in the shorter season districts. The hybrids WO7A and X006.2 from the Dominion Experimental Station, Morden, are worthy of further attention. Of the fifty-eight selections from Station hybrids only one year's yields are available to date and due to the great variability within the strains more testing will be necessary before any progress can be indicated. Beans, grown extensively in the trials in a search for more suitable freezing types, cannot be evaluated until after the frozen food taste panel meets. Included in the bean section this year were a number of bush Lima beans from Eastern Canada and the United States. The varieties US245, Peerless, Oregon and Hendersons bore crops suitable for freezing. This is the second year that varieties which will produce Lima beans under Alberta conditions have borne crops, and it is hoped that eventually this much favoured vegetable will be available to gardeners in Alberta.

Foundation vegetable seed processing was again an important part of the vegetable work, with sixteen vegetable types being grown. It was necessary this year to go back to original seed in two varieties of vegetables, National Pickling Cucumber and Cavalier Radish. It is also felt that after the unsatisfactory results of the past two years' work in the production of disease-free beans, stock seed will have to be discarded. This is not the case with the Pole Lima bean, which is under trial for Foundation status this year along with Sunshine and Burbank corn. Two of the five varieties submitted for verification in 1948 have been granted Foundation status. These are Burbank corn and Farthest North tomato. Re-selection has been started with Small Sugar pumpkin, Bison tomato and Bush vegetable marrow to overcome their defects.

Detailed reports of the vegetable seed stock trials are available, as are field records from the varietal test plots.

POTATO TRIALS

Twenty-seven varieties of potatoes were included in yield test plots. The ten highest yielding varieties have not been consistently the same. Irish Cobbler, Early Eureka, U.S.D.A.4172, and Early Vermont have appeared in the first group for five years. During the past season Carter's Early Favourite, which has consistently been among the highest yielding, was not in the first ten. Of the early potatoes, Early Epicure placed 12th and Warba 24th.

HOPS

Two groups of hops were sent to the Station during the past year from the East Malling Research Station, England. The two groups consisted of mosaic carrying varieties and mosaic free varieties with named selections and suitable male plants for pollenizing each type. The mosaic carriers were successfully established but an endeavor will have to be made to replace the mosaic free types. The varieties established and now under trial are: Bullion, Early Cluster, Brewer's Gold, Brambling, Fuggel (American), Concord, Nonsuch, Fillpocket, Pride of Kent, Northern Brewer, Quality, Early Choice, Fuggel (English). The first hops were planted at the Station in the spring of 1945. They now have had five growing seasons, have yielded well, been disease free, and given a high resin analysis. The four varieties, Early Cluster, Late Cluster, Brewer's Gold and B.C. Goldings, in the order named, had alpha resins of 6.6, 6.1, 4.2 and 5.5% and Beta resins of 12.9, 10.7, 10.1 and 13.0%. These analyses were made on the basis of air-dried samples that had not been compressed to exclude the air. During the past season a drier, with an area twelve feet square, has been constructed, and it is hoped that the facilities now available will permit the extension of the hop plantings and enable more efficient curing to be carried out.

FROZEN FOODS

The frozen food program consists of the growing, processing, freezing and scoring of fruit and vegetable varieties under test at the Station. The scoring panel, during a two-week period, tested fifty-six varieties of vegetables, twenty fruit variety preparations. The results of their scoring were submitted to the

Alberta Quick Freeze Locker Association's annual convention. From the results of this work the recommended varieties for freezing were brought up to date and distributed to the locker users of the Province. Additions to the previous list of high scoring varieties are:

Beans—Green: Tendergreen, Drought Resistant Reliable.

Wax: Pencil Pod Black Wax, Webber Wax,
Round Pod Kidney Wax.

Pole: Scarlet Wonder, Painted Lady.

Bush Lima: Triumph, Clarke's Bush (these are still in the experimental stage).

Broad: Broad Windsor.

Brussels Sprouts—Dwarf Perfection.

Cauliflower—Dwarf Erfurt.

Corn—Kernel: Burbank Golden Bantam, Gold Rush,
Earliest Golden Sweet, Senecross, Golden Cross.

On-the-Cob: Earliest Golden Sweet, Burbank Golden
Bantam, Golden Bantam, Dependagold.

Marrow—White Bush, Green Bush.

Peas—Little Marvel, Onward.

Peppers—Burpees Sunnybrook.

Squash—Hubbard, Kitchenette.

Various wrappers for frozen food were tested with corn being used as the product to be enclosed. Aluminum foil, laminated foil, wax kraft paper, cheese wax, no-air-wrap-wax, and pliofilm are the materials tested to date. With the exception of the cheese wax all were satisfactory frozen-food wrapping materials. The average loss in weight per package was very low, and the products, when prepared for the table, were fresh and attractive. During the period when the scoring panel was at the Station they judged the processed apricots from the seedling blocks. These gave very satisfactory results and the top scoring groups compared favourably with commercial varieties. The six top selections were in order: B. No. 15, B. No. 16, B. No. 20, S. No. 25, B. No. 2, and B. No. 12.

Vegetable varieties selected from the trial plots during the past summer for freezing were few in number and included the following: Nine spinach, twenty peas, three turnips, twenty beans, seven beets, four carrots, and three corn.

PROPAGATION:

The Station had an unusual number of requests for planting stock and budding material.

All suitable root stocks were budded during the past season: Apples and crabs totalled 1,500, and plum, cherry and hybrids 3,000. The weather at propagation time was hot and dry. Lined out apple and crab seedlings as root stocks totalled 2,100, and 3,000 shrub seedlings were planted out in nursery rows. A four-acre orchard of Manchurian apricot seedlings was planted. Favourable results are expected from this planting as the seed is second-generation locally grown from selected trees.

Further testing of local and imported stock seed, of various fruits, will continue to be part of the program. The progeny of fruit tree seed brought from England should be of special interest.

To speed up the propagation of trees and shrubs, which are slow to mature from seed and in some instances nearly impossible to propagate from the old style of ripened wood, green cuttings of such plants were taken in late June and early July. These were treated with a root forming hormone and set in a sandbed in the greenhouse. As a check, some of the varieties known to be easily propagated were included. The following table illustrates the results:

GREEN CUTTINGS, SUMMER, 1948

Variety	Rooted	No Response	Percentage
<i>Acer spicata</i>		×	
<i>Betula glandulosa</i>	×		22
<i>Chrysanthemums</i>	×		50
<i>Cornus stolonifera</i>	×		56
<i>Cornus sericea</i>	×		64
<i>Cornus variegata</i>	×		30
<i>Cotoneaster lucida</i>		×	
<i>Euonymus alatus</i>	×		75
<i>Euonymus autropurpurea</i>		×	
<i>Euonymus hamiltoniana</i>	×		6
<i>Euonymus maackii</i>	×		10
<i>Euonymus nanus</i>	×		90
<i>Forsythia fortunei</i>	×		76
<i>Forsythia ovata</i>	×		66
<i>Lonicera alberti</i>	×		2
<i>Lonicera Donald</i>	×		18
<i>Lonicera maackii</i>	×		20
<i>Lonicera scydostium</i>	×		40
<i>Potentilla dahurica</i>	×		52
<i>Potentilla fruticosa</i>	×		50
<i>Philadelphus avalanchi</i>	×		22
<i>Philadelphus lewisii</i>	×		76
<i>Philadelphus schrankii</i>	×		92
<i>Physocarpus amurensis</i>	×		72
<i>Princepia sinensis</i>	×		10
<i>Prunus alba nisica</i>	×		16
<i>Prunus triloba flora pleno</i>		×	
<i>Prunus tomentosa</i> B2		×	
<i>Rosa altaica</i>	×		60
<i>Rosa Betty Bland</i>	×		60
<i>Rosa Dr. Merkely</i>	×		42
<i>Sambucus aurea</i>	×		60
<i>Sambucus canadensis</i>	×		56
<i>Siberaca lavigata</i>		×	
<i>Salix siberica</i>	×		80
<i>Spiraea arguta</i>	×		26
<i>Spiraea chamaedryfolia</i>	×		12
<i>Spiraea frobelli</i>	×		80
<i>Spiraea manchurica</i>	×		68
<i>Spiraea salicifolia</i>	×		20
<i>Spiraea tricocarpa</i>	×		80
<i>Syringa amurensis</i>	×		2
<i>Syringa Charles 10th</i>	×		8
<i>Syringa japonica</i>	×		9
<i>Syringa lavois</i>	×		2
<i>Syringa persica</i>	×		2
<i>Syringa Pres. Grevy</i>		×	
<i>Tamarix hispida asstavalis</i>	×		34
<i>Tilia cordata</i>		×	
<i>Viburnum opulus sterilis</i>	×		42

STRATHMORE:

Work at the Strathmore sub-station has been greatly curtailed. The trees remaining under our control bore well and the apricots were again the outstanding feature. Five new apple seedlings fruiting for the first time were marked for further trial. The program calls for further reduction in the acreage under supervision in the coming season, but it is hoped to retain and possibly extend the apricot block.

EXTENSION:

Assistance was given in every case possible to Short Courses, Field Days, Girls' and Boys' Clubs, Horticultural Societies, etc., by the staff of the Station. The lawn at headquarters again proved to be a popular gathering place for many organized groups and was constantly in use. A Horticultural Exhibit was displayed at the Lethbridge and Calgary Horticultural Shows and again attracted widespread interest. Assistance was given by the staff in the judging at both these shows and also at the Medicine Hat Exhibition. With the appointment of a Supervisor of Horticulture for the Province the heavy demand for Station personnel to speak and assist at many horticultural gatherings will be reduced.

Last spring fruit tree material was shipped to establish eleven demonstration orchards. Scion wood, cuttings and bud-wood were shipped to many points in the Province, also to British Columbia, Saskatchewan, Manitoba and Quebec. Some grafting wood of desired specimens was sent to England.

REPORT OF RELIEF SETTLEMENT BRANCH

E. B. SWINDLEHURST, Acting Supervisor

The Relief Settlement Plan was introduced during the depression years of the 1930's as a means of providing an independent livelihood for selected families who would otherwise be in receipt of direct relief. Assistance was offered by Dominion, Provincial and Municipal governments, and the purpose of the plan was establishment of suitable families on the land, with a view to their becoming self-supporting. Farms were located by the prospective settlers and upon approval of both land and settler, assistance was provided for a period of three years.

Until 1936 the maximum assistance per family was \$700.00. With this amount, stock and equipment had to be purchased and food requirements provided. Later, depending on the size of the family, amounts varying between \$700.00 and \$1,000.00 were made available. In very few cases was the maximum amount expended.

The first settlers proceeded to their location in 1932 and settlement continued in varying degree until 1941. By that time employment conditions had improved sufficiently that further placements were deemed inadvisable. Under the Relief Settlement Plan in Alberta 1,092 families were placed. These people went out under real pioneering conditions and in spite of the care exercised in their selection only a portion of those approved could be expected to make farming their life's work.

In some cases the plan provided a means of self-support only until other work became available, and as times improved several settlers left the land to assume other employment. In these cases the plan served a useful purpose since it removed them from the atmosphere of direct relief and gave them encouragement and incentive to do something for themselves. Other families proved quite unsuitable, but these made up a fairly small proportion of those who abandoned their holdings.

Of the 682 families abandoned, 255 obtained other employment, 77 enlisted, 187 failed in their attempt at settlement and 163 were unable to continue due to ill health or for other reasons. Of the remainder, 291 have completed payment of the recoverable portion of assistance provided and 54 have made partial payment. Payments to December 31st, 1949, have amounted to \$91,396.36 of which \$4,375.81 was received during the current year. In addition, an amount of \$87,700.14 has been recovered from the sale of salvaged stock and equipment.

REPORT OF THE BOARD OF TRUSTEES OF THE SURPLUS
WHEAT BOARD MONEY RECEIVED BY THE GOVERNMENT
OF THE PROVINCE OF ALBERTA FROM THE 1916-1919
CANADIAN WHEAT BOARD

EDMONTON, Alberta,
January 23rd, 1950.

Members :

The Honourable D. A. Ure, Chairman.
Richard Ballhorn, Farmer, Wetaskiwin.
Arthur Pierson, Vice-President and Treasurer of
the Independent Grain Company, Calgary.

I have the honour to submit the report for the year ending
December 31st, 1949.

A statement showing the receipts and expenditures is at-
tached, together with a statement of Assets and Liabilities.

During the year the net receipts were \$5,689.08 as compared
with \$5,563.67 for the previous year.

Payments for the year under review amounted to \$5,755.58
as compared with \$8,149.75 during the year 1948. Of this total
of \$5,755.58, a sum of \$4,016.08 was invested in City of Calgary
3½% debentures, whereas during the previous twelve months
\$6,194.75 was invested in Province of Alberta 3½% debentures.

INVESTMENTS:

Investments at the end of the twelve month period, as shown
on the attached balance sheets, consist of \$66,000.00 of Province
of Alberta 3½% debentures, \$4,000.00 City of Calgary 3½%
debentures, \$15,000.00 Province of Alberta 2½% Savings Certi-
ficates and \$1,406.10 in Province of Alberta Special Adjustment
Coupons.

MEETINGS:

A meeting of the members of the Board was held on August
8th last at which time the schedule providing for twenty-nine
scholarships was again approved.

GENERAL

Since the Board instituted the policy of providing scholar-
ships, a total of 217 scholarships have been paid, representing an
expenditure of \$18,085.30. A schedule of the scholarships was
incorporated in my Annual Report last year.

The members of the Board have continued to follow the
policy of conserving the Principal remaining in the Trust Fund
by providing for expenditures from Income only, which was
adopted when we emerged from the depression years.

It is of especial interest and gratifying to the members of
the Board to report this year that Sydney Pawlowski, winner of
the 1949 World Oat Championship at the International Show
held in Chicago, was winner of one of the Junior Club scholar-
ships awarded by the Board in 1948.

Respectfully submitted on behalf of The Board of Trustees.

D. A. URE,
Chairman.

Date Due

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INVESTMENTS:

				Book Value
Province of A				
June 1, 1968				\$11,021.87
June 1, 1968				15,000.00
June 1, 1968				1,000.00
June 1, 1968				10,018.26
June 1, 1968				29,000.00
City of Calgary				
July 1, 1968				3,990.26
				<u>\$70,030.39</u>
Province of A				
Coupons				1,388.73
Province of A				
Sept. 1, 1968				15,000.00
Cash in Bank				2,455.02
Bond Interest R				
Coupons				1,528.27
Accrued Interest				405.57
				<u>\$90,807.98</u>
Trust Fund Dec				\$89,771.03
Add: Surplus for				1,036.95
TRUST FUND D				<u>\$90,807.98</u>
Statement				1949
Bank Balance De				\$ 2,521.52
Interest on \$6				
Interest on \$1				
Interest on Bs				
Interest Receiv				
Coupons d				
Redemption Jt				
Coupons				
Refund of Sch				
				<u>5,689.08</u>
				<u>\$ 8,210.60</u>

DEDUCT: Payments

University of Alberta Scholarships	700.00
Vermilion School and Farm Scholarships	675.00
Olds School and Farm Scholarships	225.00
P. W. Johnson—Honorarium	100.00
Arthur Pierson—Meeting Expenses	20.00
Richard Ballhorn—Meeting Expenses	18.50
City of Calgary—Registration Fee	1.00
Investment: \$4,000 City of Calgary 3½ % Debentures	
due July 1st, 1968 @ 99.75	3,990.00
Accrued Interest purchased	26.08
	<u>5,755.58</u>

Bank Balance December 31st, 1949 \$ 2,455.02

DEPARTMENT OF AGRICULTURE

WHEAT BOARD MONIES TRUST FUND

Balance Sheet as at December 31st, 1949

INVESTMENTS:		ASSETS	
		Par Value	Book Value
Province of Alberta 3½ % Debentures due:			
June 1, 1950-63		\$11,000.00	\$11,021.87
June 1, 1950-64		15,000.00	15,000.00
June 1, 1950-65		1,000.00	1,000.00
June 1, 1950-68		10,000.00	10,018.26
June 1, 1950-69		29,000.00	29,000.00
City of Calgary 3½ % Debentures due:			
July 1, 1968		4,990.00	3,990.26
		<u>\$70,000.00</u>	<u>\$70,030.39</u>
Province of Alberta Special Adjustment			
Coupons due June 1, 1950		1,406.10	1,388.73
Province of Alberta 2½ % Savings Certificates due			
Sept. 1, 1950		15,000.00	15,000.00
		<u>\$86,406.10</u>	
Cash in Bank			2,455.02
Bond Interest Receivable re: Special Adjustment			
Coupons due June 1, 1950			1,528.27
Accrued Interest			405.57
			<u>\$90,807.98</u>
LIABILITIES			
Trust Fund December 31, 1948			\$89,771.03
Add: Surplus for year 1949			1,036.95
TRUST FUND December 31st, 1949			<u>\$90,807.98</u>
Statement of Receipts and Payments for the year ended December 31, 1949			
Bank Balance December 31, 1948	\$		\$ 2,521.52
Interest on \$66,000 Prov. of Alberta Debentures	2,310.00		
Interest on \$15,000 Province of Alberta Savings. Cert. ...	375.00		
Interest on Bank Balance	25.97		
Interest Receivable—Special Adjustment			
Coupons due June 1, 1949	1,528.27		
Redemption June 1, 1949—Special Adjustment			
Coupons purchased	1,406.19		
Refund of Scholarship re Dina Parry	43.74		
			<u>5,689.08</u>
DEDUCT: Payments			\$ 8,210.60
University of Alberta Scholarships	700.00		
Vermilion School and Farm Scholarships	675.00		
Olds School and Farm Scholarships	225.00		
P. W. Johnson—Honorarium	100.00		
Arthur Pierson—Meeting Expenses	20.00		
Richard Ballhorn—Meeting Expenses	18.50		
City of Calgary—Registration Fee	1.00		
Investment: \$4,000 City of Calgary 3½ % Debentures			
due July 1st, 1968 @ 99.75	3,990.00		
Accrued Interest purchased	26.08		
			<u>5,755.58</u>
Bank Balance December 31st, 1949			<u>\$ 2,455.02</u>

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